

## Sequence Listing

<110> Shen Zhen Tsinghua Yuanxing Bio-Pharm Science & Technology Co., Ltd.

<120> Anti-Tumor Molecular Vaccine and Method of making thereof

<130> CGCNS31755

<150> CN02159602.6

<151> 2002-12-27

<160> 27

<170> PatentIn version 3.1

<210> 1

<211> 3633

<212> DNA

<213> EE(homo sapiens)

<220>

<221> CDS

<222> (1)..(3630)

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48

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Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
20 25 30

96

ggc acg agt aac aag ctc acg cag ttg ggc act ttt gaa gat cat ttt

144

Gly	Thr	Ser	Asn	Lys	Leu	Thr	Gln	Leu	Gly	Thr	Phe	Glu	Asp	His	Phe		
35					40				45								
ctc	agc	ctc	cag	agg	atg	ttc	aat	aac	tgt	gag	gtg	gtc	ctt	ggg	aat	192	
Leu	Ser	Leu	Gln	Arg	Met	Phe	Asn	Asn	Cys	Glu	Val	Val	Leu	Gly	Asn		
50					55				60								
ttg	gaa	att	acc	tat	gtg	cag	agg	aat	tat	gat	ctt	tcc	ttc	tta	aag	240	
Leu	Glu	Ile	Thr	Tyr	Val	Gln	Arg	Asn	Tyr	Asp	Leu	Ser	Phe	Leu	Lys		
65					70				75					80			
acc	atc	cag	gag	gtg	gct	ggt	tat	gtc	ctc	att	gcc	ctc	aac	aca	gtg	288	
Thr	Ile	Gln	Glu	Val	Ala	Gly	Tyr	Val	Leu	Ile	Ala	Leu	Asn	Thr	Val		
85					90				95								
gag	cga	att	cct	ttg	gaa	aac	ctg	cag	atc	atc	aga	gga	aat	atg	tac	336	
Glu	Arg	Ile	Pro	Leu	Glu	Asn	Leu	Gln	Ile	Ile	Arg	Gly	Asn	Met	Tyr		
100					105				110								
tac	gaa	aat	tcc	tat	gcc	tta	gca	gtc	tta	tct	aac	tat	gat	gca	aat	384	
Tyr	Glu	Asn	Ser	Tyr	Ala	Leu	Ala	Val	Leu	Ser	Asn	Tyr	Asp	Ala	Asn		
115					120				125								
aaa	acc	gga	ctg	aag	gag	ctg	ccc	atg	aga	aat	tta	cag	gaa	atc	ctg	432	
Lys	Thr	Gly	Leu	Lys	Glu	Leu	Pro	Met	Arg	Asn	Leu	Gln	Glu	Ile	Leu		
130					135				140								
cat	ggc	gcc	gtg	cgg	ttc	agc	aac	aac	cct	gcc	ctg	tgc	aac	gtg	gag	480	
His	Gly	Ala	Val	Arg	Phe	Ser	Asn	Asn	Pro	Ala	Leu	Cys	Asn	Val	Glu		
145					150				155					160			
agc	atc	cag	tgg	cgg	gac	ata	gtc	agc	agt	gac	ttt	ctc	agc	aac	atg	528	
Ser	Ile	Gln	Trp	Arg	Asp	Ile	Val	Ser	Ser	Asp	Phe	Leu	Ser	Asn	Met		
165					170				175								
tcg	atg	gac	ttc	cag	aac	cac	ctg	ggc	agc	tgc	caa	aag	tgt	gat	cca	576	
Ser	Met	Asp	Phe	Gln	Asn	His	Leu	Gly	Ser	Cys	Gln	Lys	Cys	Asp	Pro		
180					185				190								
agc	tgt	ccc	aat	ggg	agc	tgc	tgg	ggt	gca	gga	gag	gag	aac	tgc	cag	624	
Ser	Cys	Pro	Asn	Gly	Ser	Cys	Trp	Gly	Ala	Gly	Glu	Glu	Asn	Cys	Gln		
195					200				205								
aaa	ctg	acc	aaa	atc	atc	tgt	gcc	cag	cag	tgc	tcc	ggg	cgc	tgc	cgt	672	
Lys	Leu	Thr	Lys	Ile	Ile	Cys	Ala	Gln	Gln	Cys	Ser	Gly	Arg	Cys	Arg		
210					215				220								
ggc	aag	tcc	ccc	agt	gac	tgc	tgc	cac	aac	cag	tgt	gct	gca	ggc	tgc	720	
Gly	Lys	Ser	Pro	Ser	Asp	Cys	Cys	His	Asn	Gln	Cys	Ala	Ala	Gly	Cys		
225					230				235					240			
aca	ggc	ccc	cgg	gag	agc	gac	tgc	ctg	gtc	tgc	cgc	aaa	ttc	cga	gac	768	
Thr	Gly	Pro	Arg	Glu	Ser	Asp	Cys	Leu	Val	Cys	Arg	Lys	Phe	Arg	Asp		
245					250				255								
gaa	gcc	acg	tgc	aag	gac	acc	tgc	ccc	cca	ctc	atg	ctc	tac	aac	ccc	816	
Glu	Ala	Thr	Cys	Lys	Asp	Thr	Cys	Pro	Pro	Leu	Met	Leu	Tyr	Asn	Pro		

260	265	270	
acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc ttt ggt Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly 275	280	285	864
gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca gat cac Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His 290	295	300	912
ggc tcg tgc gtc cga gcc tgt ggg gcc gac agc tat gag atg gag gaa Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu 305	310	315	960
gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct tgc cgc aaa gtg Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val 325	330	335	1008
tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc ata aat Cys Asn Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn 340	345	350	1056
gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt ggc gat Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp 355	360	365	1104
ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc ttc aca cat act Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr 370	375	380	1152
cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta aag gaa Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu 385	390	395	1200
atc aca ggg ttt ttg ctg att cag gct tgg cct gaa aac agg acg gac Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp 405	410	415	1248
ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc agg acc aag caa Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln 420	425	430	1296
cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac ata aca tcc ttg His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu 435	440	445	1344
gga tta cgc tcc ctc aag gag ata agt gat gga gat gtg ata att tca Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser 450	455	460	1392
gga aac aaa aat ttg tgc tat gca aat aca ata aac tgg aaa aaa ctg Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu 465	470	475	1440
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gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc tct tgc cgg aat Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn 515 520 525	1584
gtc agc cga ggc agg gaa tgc gtg gac aag tgc aac ctt ctg gag ggt Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly 530 535 540	1632
gag cca agg gag ttt gtg gag aac tct gag tgc ata cag tgc cac cca Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro 545 550 555 560	1680
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gac aac tgt atc cag tgt gcc cac tac att gac ggc ccc cac tgc gtc Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val 580 585 590	1776
aag acc tgc ccg gca gga gtc atg gga gaa aac aac acc ctg gtc tgg Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp 595 600 605	1824
aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc cat cca aac tgc Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys 610 615 620	1872
acc tac gga tgc act ggg cca ggt ctt gaa ggc tgt cca acg aat ggg Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly 625 630 635 640	1920
cct aag atc ccg tcc atc gcc act ggg atg gtg ggg gcc ctc ctc ttg Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly Ala Leu Leu Leu 645 650 655	1968
ctg ctg gtg gtc ctg ggg atc ggc ctc ttc atg cga agg cgc cac Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His 660 665 670	2016
atc gtt cgg aag cgc acg ctg cgg agg ctg ctg cag gag agg gag ctt Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu 675 680 685	2064
gtg gag cct ctt aca ccc agt gga gaa gct ccc aac caa gct ctc ttg Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu 690 695 700	2112
agg atc ttg aag gaa act gaa ttc aaa aag atc aaa gtg ctg ggc tcc Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser 705 710 715 720	2160

ggt gcg ttc ggc acg gtg tat aag gga ctc tgg atc cca gaa ggt gag Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu 725 730 735	2208
aaa gtt aaa att ccc gtc gct atc aag gaa tta aga gaa gca aca tct Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser 740 745 750	2256
ccg aaa gcc aac aag gaa atc ctc gat gaa gcc tac gtg atg gcc agc Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser 755 760 765	2304
gtg gac aac ccc cac gtg tgc cgc ctg ggc atc tgc ctc acc tcc Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser 770 775 780	2352
acc gtg cag ctc atc acg cag ctc atg ccc ttc ggc tgc ctc ctg gac Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly Cys Leu Leu Asp 785 790 795 800	2400
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tgg tgt gtg cag atc gca aag ggc atg aac tac ttg gag gac cgt cgc Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg 820 825 830	2496
ttg gtg cac cgc gac ctg gca gcc agg aac gta ctg gtg aaa aca ccg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro 835 840 845	2544
cag cat gtc aag atc aca gat ttt ggg ctg gcc aaa ctg ctg ggt gcg Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Gly Ala 850 855 860	2592
gaa gag aaa gaa tac cat gca gaa gga ggc aaa gtg cct atc aag tgg Glu Glu Lys Glu Tyr His Ala Glu Gly Lys Val Pro Ile Lys Trp 865 870 875 880	2640
atg gca ttg gaa tca att tta cac aga atc tat acc cac cag agt gat Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp 885 890 895	2688
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Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys			
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ttc cgt gag ttg atc atc gaa ttc tcc aaa atg gcc cga gac ccc cag			2928
Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala Arg Asp Pro Gln			
965	970	975	
cgc tac ctt gtc att cag ggg gat gaa aga atg cat ttg cca agt cct			2976
Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro			
980	985	990	
aca gac tcc aac ttc tac cgt gcc ctg atg gat gaa gaa gac atg gac			3024
Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp			
995	1000	1005	
gac gtg gtg gat gcc gac gag tac ctc atc cca cag cag ggc ttc			3069
Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe			
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ttc agc agc ccc tcc acg tca cgg act ccc ctc ctg agc tct ctg			3114
Phe Ser Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu			
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agt gca acc agc aac aat tcc acc gtg gct tgc att gat aga aat			3159
Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn			
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ggg ctg caa agc tgt ccc atc aag gaa gac agc ttc ttg cag cga			3204
Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg			
1055	1060	1065	
tac agc tca gac ccc aca ggc gcc ttg act gag gac agc ata gac			3249
Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp			
1070	1075	1080	
gac acc ttc ctc cca gtg cct gaa tac ata aac cag tcc gtt ccc			3294
Asp Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro			
1085	1090	1095	
aaa agg ccc gct ggc tct gtg cag aat cct gtc tat cac aat cag			3339
Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln			
1100	1105	1110	
cct ctg aac ccc gcg ccc agc aga gac cca cac tac cag gac ccc			3384
Pro Leu Asn Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro			
1115	1120	1125	
cac agc act gca gtg ggc aac ccc gag tat ctc aac act gtc cag			3429
His Ser Thr Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln			
1130	1135	1140	
ccc acc tgt gtc aac agc aca ttc gac agc cct gcc cac tgg gcc			3474
Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala His Trp Ala			
1145	1150	1155	
cag aaa ggc agc cac caa att agc ctg gac aac cct gac tac cag			3519
Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln			

1160	1165	1170	
cag gac ttc ttt ccc aag gaa	gcc aag cca aat ggc	atc ttt aag	3564
Gln Asp Phe Phe Pro Lys Glu	Ala Lys Pro Asn Gly	Ile Phe Lys	
1175	1180	1185	
ggc tcc aca gct gaa aat gca	gaa tac cta agg gtc	gcg cca caa	3609
Gly Ser Thr Ala Glu Asn Ala	Glu Tyr Leu Arg Val	Ala Pro Gln	
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Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe			
35	40	45	
Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn			
50	55	60	
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys			
65	70	75	80
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val			
85	90	95	
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr			
100	105	110	
Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn			
115	120	125	

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg  
210 215 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu  
305 310 315 320

Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr  
370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu  
485 490 495

Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys  
610 615 620

Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly  
625 630 635 640

Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly Ala Leu Leu Leu  
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Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His  
660 665 670

Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu  
675 680 685

Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu  
690 695 700

Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser  
705 710 715 720

Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu  
725 730 735

Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser  
740 745 750

Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser  
755 760 765

Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser  
770 775 780

Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly Cys Leu Leu Asp  
785 790 795 800

Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu Leu Asn

805

810

815

Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg  
820 825 830

Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro  
835 840 845

Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Gly Ala  
850 855 860

Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile Lys Trp  
865 870 875 880

Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp  
885 890 895

Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ser  
900 905 910

Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser Ser Ile Leu Glu  
915 920 925

Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr  
930 935 940

Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys  
945 950 955 960

Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala Arg Asp Pro Gln  
965 970 975

Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro  
980 985 990

Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp  
995 1000 1005

Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe  
1010 1015 1020

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1025 1030 1035

Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn  
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Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg  
1055 1060 1065

Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp  
1070 1075 1080

Asp Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro  
1085 1090 1095

Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln  
1100 1105 1110

Pro Leu Asn Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro  
1115 1120 1125

His Ser Thr Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln  
1130 1135 1140

Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala His Trp Ala  
1145 1150 1155

Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln  
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Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe Lys  
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20 25 30

ggc acg agt aac aag ctc acg cag ttg ggc act ttt gaa gat cat ttt 144  
Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

ctc agc ctc cag agg atg ttc aat aac tgt gag gtg gtc ctt ggg aat 192  
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50 55 60

ttg gaa att acc tat gtg cag agg aat tat gat ctt tcc ttc tta aag 240  
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80

acc atc cag gag gtg gct ggt tat gtc ctc att gcc ctc aac aca gtg 288  
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95

gag cga att cct ttg gaa aac ctg cag atc atc aga gga aat atg tac 336  
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr  
100 105 110

tac gaa aat tcc tat gcc tta gca gtc tta tct aac tat gat gca aat 384  
Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn  
115 120 125

aaa acc gga ctg aag gag ctg ccc atg aga aat tta cag gaa atc ctg 432  
Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

cat ggc gcc gtg cgg ttc agc aac aac cct gcc ctg tgc aac gtg gag 480  
His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

agc atc cag tgg cgg gac ata gtc agt gac ttt ctc agc aac atg 528  
Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

tcg atg gac ttc cag aac cac ctg ggc agc tgc caa aag tgt gat cca	576		
Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro			
180	185	190	
agc tgt ccc aat ggg agc tgc tgg ggt gca gga gag gag aac tgc cag	624		
Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Asn Cys Gln			
195	200	205	
aaa ctg acc aaa atc atc tgt gcc cag cag tgc tcc ggg cgc tgc cgt	672		
Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg			
210	215	220	
ggc aag tcc ccc agt gac tgc tgc cac aac cag tgt gct gca ggc tgc	720		
Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys			
225	230	235	240
aca ggc ccc cgg gag agc gac tgc ctg gtc tgc cgc aaa ttc cga gac	768		
Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp			
245	250	255	
gaa gcc acg tgc aag gac acc tgc ccc cca ctc atg ctc tac aac ccc	816		
Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro			
260	265	270	
acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc ttt ggt	864		
Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly			
275	280	285	
gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca gat cac	912		
Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His			
290	295	300	
ggc tcg tgc gtc cga gcc tgt ggg gcc gac agc tat gag atg gag gaa	960		
Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu			
305	310	315	320
gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct tgc cgc aaa gtg	1008		
Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val			
325	330	335	
tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc ata aat	1056		
Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn			
340	345	350	
gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt ggc gat	1104		
Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp			
355	360	365	
ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc ttc aca cat act	1152		
Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr			
370	375	380	
cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta aag gaa	1200		
Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu			
385	390	395	400

atc aca ggg ttt ttg ctg att cag gct tgg cct gaa aac agg acg gac Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp 405 410 415	1248
ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc agg acc aag caa Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln 420 425 430	1296
cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac ata aca tcc ttg His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu 435 440 445	1344
gga tta cgc tcc ctc aag gag ata agt gat gga gat gtg ata att tca Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser 450 455 460	1392
gga aac aaa aat ttg tgc tat gca aat aca ata aac tgg aaa aaa ctg Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu 465 470 475 480	1440
ttt ggg acc tcc ggt cag aaa acc aaa att ata agc aac aga ggt gaa Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu 485 490 495	1488
aac agc tgc aag gcc aca ggc cag gtc tgc cat gcc ttg tgc tcc ccc Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro 500 505 510	1536
gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc tct tgc cgg aat Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn 515 520 525	1584
gtc agc cga ggc agg gaa tgc gtg gac aag tgc aac ctt ctg gag ggt Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly 530 535 540	1632
gag cca agg gag ttt gtg gag aac tct gag tgc ata cag tgc cac cca Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro 545 550 555 560	1680
gag tgc ctg cct cag gcc atg aac atc acc tgc aca gga cgg gga cca Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro 565 570 575	1728
gac aac tgt atc cag tgt gcc cac tac att gac ggc ccc cac tgc gtc Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val 580 585 590	1776
aag acc tgc ccg gca gga gtc atg gga gaa aac aac acc ctg gtc tgg Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp 595 600 605	1824
aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc cat cca aac tgc Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys 610 615 620	1872
acc tac gga tgc act ggg cca ggt ctt gaa ggc tgt cca acg aat gga	1920

Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly  
625 630 635 640

agc tac ata gtg tct cac ttt cca aga tca ttc tac aag atg tca gtg 1968  
Ser Tyr Ile Val Ser His Phe Pro Arg Ser Phe Tyr Lys Met Ser Val  
645 650 655

cac tga 1974  
His

<210> 4

<211> 657

<212> PRT

<213> Human homo sapiens)

<400> 4

Met Arg Pro Ser Gly Thr Ala Gly Ala Ala Leu Leu Ala Leu Leu Ala  
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Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
20 25 30

Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr  
100 105 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn  
115 120 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu

130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg  
210 215 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu  
305 310 315 320

Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr  
370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu  
485 490 495

Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys  
610 615 620

Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly  
625 630 635 640

Ser Tyr Ile Val Ser His Phe Pro Arg Ser Phe Tyr Lys Met Ser Val  
645 650 655

His

<210> 5

<211> 2118

<212> DNA

<213> Human (homo sapiens)

<220>

<221> CDS

<222> (1)..(2115)

<223>

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Met Arg Pro Ser Gly Thr Ala Gly Ala Ala Leu Leu Ala Leu Ala  
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gcg ctc tgc ccg gcg agt cgg gct ctg gag gaa aag aaa gtt tgc caa 96  
Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
20 25 30

ggc acg agt aac aag ctc acg cag ttg ggc act ttt gaa gat cat ttt 144  
Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

ctc agc ctc cag agg atg ttc aat aac tgt gag gtg gtc ctt ggg aat 192  
Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

ttg gaa att acc tat gtg cag agg aat tat gat ctt tcc ttc tta aag Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys 65 70 75 80	240
acc atc cag gag gtg gct ggt tat gtc ctc att gcc ctc aac aca gtg Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val 85 90 95	288
gag cga att cct ttg gaa aac ctg cag atc atc aga gga aat atg tac Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr 100 105 110	336
tac gaa aat tcc tat gcc tta gca gtc tta tct aac tat gat gca aat Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn 115 120 125	384
aaa acc gga ctg aag gag ctg ccc atg aga aat tta cag gaa atc ctg Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu 130 135 140	432
cat ggc gcc gtg cgg ttc agc aac aac cct gcc ctg tgc aac gtg gag His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu 145 150 155 160	480
agc atc cag tgg cgg gac ata gtc agc agt gac ttt ctc agc aac atg Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met 165 170 175	528
tcg atg gac ttc cag aac cac ctg ggc agc tgc caa aag tgt gat cca Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro 180 185 190	576
agc tgt ccc aat ggg agc tgc tgg ggt gca gga gag gag aac tgc cag Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Asn Cys Gln 195 200 205	624
aaa ctg acc aaa atc atc tgt gcc cag tgc tcc ggg cgc tgc cgt Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg 210 215 220	672
ggc aag tcc ccc agt gac tgc tgc cac aac cag tgt gct gca ggc tgc Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys 225 230 235 240	720
aca ggc ccc cgg gag agc gac tgc ctg gtc tgc cgc aaa ttc cga gac Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp 245 250 255	768
gaa gcc acg tgc aag gac acc tgc ccc cca ctc atg ctc tac aac ccc Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro 260 265 270	816
acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc ttt ggt Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly 275 280 285	864

gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca gat cac Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His 290 295 300	912
ggc tcg tgc gtc cga gcc tgt ggg gcc gac agc tat gag atg gag gaa Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu 305 310 315 320	960
gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct tgc cgc aaa gtg Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val 325 330 335	1008
tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc ata aat Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn 340 345 350	1056
gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt ggc gat Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp 355 360 365	1104
ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc ttc aca cat act Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr 370 375 380	1152
cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta aag gaa Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu 385 390 395 400	1200
atc aca ggg ttt ttg ctg att cag gct tgg cct gaa aac agg acg gac Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp 405 410 415	1248
ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc agg acc aag caa Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln 420 425 430	1296
cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac ata aca tcc ttg His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu 435 440 445	1344
gga tta cgc tcc ctc aag gag ata agt gat gga gat gtg ata att tca Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser 450 455 460	1392
gga aac aaa aat ttg tgc tat gca aat aca ata aac tgg aaa aaa ctg Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu 465 470 475 480	1440
ttt ggg acc tcc ggt cag aaa acc aaa att ata agc aac aga ggt gaa Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu 485 490 495	1488
aac agc tgc aag gcc aca ggc cag gtc tgc cat gcc ttg tgc tcc ccc Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro 500 505 510	1536
gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc tct tgc cgg aat	1584

Glu	Gly	Cys	Trp	Gly	Pro	Glu	Pro	Arg	Asp	Cys	Val	Ser	Cys	Arg	Asn	
515						520					525					
gtc agc cga ggc agg gaa tgc gtg gac aag tgc aac ctt ctg gag ggt															1632	
Val	Ser	Arg	Gly	Arg	Glu	Cys	Val	Asp	Lys	Cys	Asn	Leu	Leu	Glu	Gly	
530						535					540					
gag cca agg gag ttt gtg gag aac tct gag tgc ata cag tgc cac cca															1680	
Glu	Pro	Arg	Glu	Phe	Val	Glu	Asn	Ser	Glu	Cys	Ile	Gln	Cys	His	Pro	
545						550					555				560	
gag tgc ctg cct cag gcc atg aac atc acc tgc aca gga cgg gga cca															1728	
Glu	Cys	Leu	Pro	Gln	Ala	Met	Asn	Ile	Thr	Cys	Thr	Gly	Arg	Gly	Pro	
565						570					575					
gac aac tgt atc cag tgt gcc cac tac att gac ggc ccc cac tgc gtc															1776	
Asp	Asn	Cys	Ile	Gln	Cys	Ala	His	Tyr	Ile	Asp	Gly	Pro	His	Cys	Val	
580						585					590					
aag acc tgc ccg gca gga gtc atg gga gaa aac aac acc ctg gtc tgg															1824	
Lys	Thr	Cys	Pro	Ala	Gly	Val	Met	Gly	Glu	Asn	Asn	Thr	Leu	Val	Trp	
595						600					605					
aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc cat cca aac tgc															1872	
Lys	Tyr	Ala	Asp	Ala	Gly	His	Val	Cys	His	Leu	Cys	His	Pro	Asn	Cys	
610						615					620					
acc tac ggg cca gga aat gag agt ctc aaa gcc atg tta ttc tgc ctt															1920	
Thr	Tyr	Gly	Pro	Gly	Asn	Glu	Ser	Leu	Lys	Ala	Met	Leu	Phe	Cys	Leu	
625						630					635				640	
ttt aaa cta tca tcc tgt aat caa agt aat gat ggc agc gtg tcc cac															1968	
Phe	Lys	Leu	Ser	Ser	Cys	Asn	Gln	Ser	Asn	Asp	Gly	Ser	Val	Ser	His	
645						650					655					
cag agc ggg agc cca gct gct cag gag tca tgc tta gga tgg atc cct															2016	
Gln	Ser	Gly	Ser	Pro	Ala	Ala	Gln	Glu	Ser	Cys	Leu	Gly	Trp	Ile	Pro	
660						665					670					
tct ctt ctg ccg tca gag ttt cag ctg ggt tgg ggt gga tgc agc cac															2064	
Ser	Leu	Leu	Pro	Ser	Glu	Phe	Gln	Leu	Gly	Trp	Gly	Cys	Ser	His		
675						680					685					
ctc cat gcc tgg cct tct gca tct gtg atc atc acg gcc tcc tcc tgc															2112	
Leu	His	Ala	Trp	Pro	Ser	Ala	Ser	Val	Ile	Ile	Thr	Ala	Ser	Ser	Cys	
690						695					700					
cac tga															2118	
His																
705																

<210> 6

<211> 705

<212> PRT

<213> Human(homo sapiens)

<400> 6

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Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
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Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr  
100 105 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn  
115 120 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg  
210 215 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu  
305 310 315 320

Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr  
370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu  
485 490 495

Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys  
610 615 620

Thr Tyr Gly Pro Gly Asn Glu Ser Leu Lys Ala Met Leu Phe Cys Leu  
625 630 635 640

Phe Lys Leu Ser Ser Cys Asn Gln Ser Asn Asp Gly Ser Val Ser His  
645 650 655

Gln Ser Gly Ser Pro Ala Ala Gln Glu Ser Cys Leu Gly Trp Ile Pro  
660 665 670

Ser Leu Leu Pro Ser Glu Phe Gln Leu Gly Trp Gly Gly Cys Ser His  
675 680 685

Leu His Ala Trp Pro Ser Ala Ser Val Ile Ile Thr Ala Ser Ser Cys  
690 695 700

His  
705

<210> 7

<211> 1887

<212> DNA

<213> Human homo sapiens)

<220>

<221> CDS

<222> (1)..(1884)

<223>

<400> 7

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gcg ctc tgc ccg gcg agt cgg gct ctg gag gaa aag aaa gtt tgc caa 96  
Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
20 25 30

ggc acg agt aac aag ctc acg cag ttg ggc act ttt gaa gat cat ttt 144  
Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

ctc agc ctc cag agg atg ttc aat aac tgt gag gtg gtc ctt ggg aat 192  
Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

ttg gaa att acc tat gtg cag agg aat tat gat ctt tcc ttc tta aag 240  
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80

acc atc cag gag gtg gct ggt tat gtc ctc att gcc ctc aac aca gtg	288
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val	
85 90 95	
gag cga att cct ttg gaa aac ctg cag atc atc aga gga aat atg tac	336
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr	
100 105 110	
tac gaa aat tcc tat gcc tta gca gtc tta tct aac tat gat gca aat	384
Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn	
115 120 125	
aaa acc gga ctg aag gag ctg ccc atg aga aat tta cag gaa atc ctg	432
Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu	
130 135 140	
cat ggc gcc gtg cgg ttc agc aac aac cct gcc ctg tgc aac gtg gag	480
His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu	
145 150 155 160	
agc atc cag tgg cgg gac ata gtc agc agt gac ttt ctc agc aac atg	528
Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met	
165 170 175	
tcg atg gac ttc cag aac cac ctg ggc agc tgc caa aag tgt gat cca	576
Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro	
180 185 190	
agc tgt ccc aat ggg agc tgc tgg ggt gca gga gag gag aac tgc cag	624
Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln	
195 200 205	
aaa ctg acc aaa atc atc tgt gcc cag cag tgc tcc ggg cgc tgc cgt	672
Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg	
210 215 220	
ggc aag tcc ccc agt gac tgc tgc cac aac cag tgt gct gca ggc tgc	720
Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys	
225 230 235 240	
aca ggc ccc cgg gag agc gac tgc ctg gtc tgc cgc aaa ttc cga gac	768
Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp	
245 250 255	
gaa gcc acg tgc aag gac acc tgc ccc cca ctc atg ctc tac aac ccc	816
Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro	
260 265 270	
acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc ttt ggt	864
Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly	
275 280 285	
gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca gat cac	912
Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His	
290 295 300	
ggc tcg tgc gtc cga gcc tgt ggg gcc gac agc tat gag atg gag gaa	960

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu				
305	310	315	320	
gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct tgc cgc aaa gtt				1008
Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val				
325	330	335		
tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc ata aat				1056
Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn				
340	345	350		
gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt ggc gat				1104
Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp				
355	360	365		
ctc cac atc ctg ccg gtc gca ttt agg ggt gac tcc ttc aca cat act				1152
Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr				
370	375	380		
cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta aag gaa				1200
Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu				
385	390	395	400	
atc aca ggg ttt ttg ctg att cag gct tgg cct gaa aac agg acg gac				1248
Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp				
405	410	415		
ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc agg acc aag caa				1296
Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln				
420	425	430		
cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac ata aca tcc ttg				1344
His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu				
435	440	445		
gga tta cgc tcc ctc aag gag ata agt gat gga gat gtc ata att tca				1392
Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser				
450	455	460		
gga aac aaa aat ttg tgc tat gca aat aca ata aac tgg aaa aaa ctg				1440
Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu				
465	470	475	480	
ttt ggg acc tcc ggt cag aaa acc aaa att ata agc aac aga ggt gaa				1488
Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu				
485	490	495		
aac agc tgc aag gcc aca ggc cag gtc tgc cat gcc ttg tgc tcc ccc				1536
Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro				
500	505	510		
gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc tct tgc cgg aat				1584
Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn				
515	520	525		
gtc agc cga ggc agg gaa tgc gtc gac aag tgc aac ctt ctg gag ggt				1632
Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly				

530	535	540	
gag cca agg gag ttt gtg gag aac tct gag tgc ata cag tgc cac cca Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro 545	550	555	1680
gag tgc ctg cct cag gcc atg aac atc acc tgc aca gga cgg gga cca Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro 565	570	575	1728
gac aac tgt atc cag tgt gcc cac tac att gac ggc ccc cac tgc gtc Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val 580	585	590	1776
aag acc tgc ccg gca gga gtc atg gga gaa aac aac acc ctg gtc tgg Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp 595	600	605	1824
aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc cat cca aac tgc Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys 610	615	620	1872
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Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe 35 40 45			
Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn 50 55 60			
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys 65 70 75 80			

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr  
100 105 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn  
115 120 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg  
210 215 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu  
305 310 315 320

Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr  
370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu  
485 490 495

Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp  
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Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys  
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Thr Tyr Gly Ser  
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gcg ctc tgc ccg gcg agt cggt gct ctg gag gaa aag aaa gtt tgc caa 96  
Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln  
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ggc acg agt aac aag ctc acg cag ttg ggc act ttt gaa gat cat ttt	144
Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe	
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ctc agc ctc cag agg atg ttc aat aac tgt gag gtg gtc ctt ggg aat	192
Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn	
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ttg gaa att acc tat gtg cag agg aat tat gat ctt tcc ttc tta aag	240
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys	
65 70 75 80	
acc atc cag gag gtg gct ggt tat gtc ctc att gcc ctc aac aca gtg	288
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val	
85 90 95	
gag cga att cct ttg gaa aac ctg cag atc atc aga gga aat atg tac	336
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr	
100 105 110	
tac gaa aat tcc tat gcc tta gca gtc tta tct aac tat gat gca aat	384
Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn	
115 120 125	
aaa acc gga ctg aag gag ctg ccc atg aga aat tta cag gaa atc ctg	432
Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu	
130 135 140	
cat ggc gcc gtg cgg ttc agc aac aac cct gcc ctg tgc aac gtg gag	480
His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu	
145 150 155 160	
agc atc cag tgg cgg gac ata gtc agc agt gac ttt ctc agc aac atg	528
Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met	
165 170 175	
tcg atg gac ttc cag aac cac ctg ggc agc tgc caa aag tgt gat cca	576
Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro	
180 185 190	
agc tgt ccc aat ggg agc tgc tgg ggt gca gga gag gag aac tgc cag	624
Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln	
195 200 205	
aaa ctg acc aaa atc atc tgt gcc cag cag tgc tcc ggg cgc tgc cgt	672
Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg	
210 215 220	
ggc aag tcc ccc agt gac tgc tgc cac aac cag tgt gct gca ggc tgc	720
Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys	
225 230 235 240	
aca ggc ccc cgg gag agc gac tgc ctg gtc tgc cgc aaa ttc cga gac	768
Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp	
245 250 255	
gaa gcc acg tgc aag gac acc tgc ccc cca ctc atg ctc tac aac ccc	816

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro			
260	265	270	
acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc ttt ggt			864
Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly			
275	280	285	
gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca gat cac			912
Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His			
290	295	300	
ggc tcg tgc gtc cga gcc tgt ggg gcc gac agc tat gag atg gag gaa			960
Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu			
305	310	315	320
gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct tgc cgc aaa gtg			1008
Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val			
325	330	335	
tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc ata aat			1056
Cys Asn Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn			
340	345	350	
gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt ggc gat			1104
Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp			
355	360	365	
ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc ttc aca cat act			1152
Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr			
370	375	380	
cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta aag gaa			1200
Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu			
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25

30

Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn  
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Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
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Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
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Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr  
100 105 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn  
115 120 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu  
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met  
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg  
210 215 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu  
305 310 315 320

Asp Gly Val Arg Lys Cys Lys Cys Glu Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr  
370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Leu Ser  
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gcg ctc tgc ccg gcg agt cgg gct ctg gag gaa aag cgt aat tat gtg			96
Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Arg Asn Tyr Val			
20 25 30			
gtg aca gat cac ggc tcg tgc cga gcc tgt ggg gcc gac agc tat			144
Val Thr Asp His Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr			
35 40 45			
gag atg gag gaa gac ggc gtc cgc aag tgt aag aag tgc gaa ggg cct			192
Glu Met Glu Glu Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro			
50 55 60			
tgc cgc aaa gtg tgt aac gga ata ggt att ggt gaa ttt aaa gac tca			240
Cys Arg Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser			
65 70 75 80			
ctc tcc ata aat gct acg aat att aaa cac ttc aaa aac tgc acc tcc			288
Leu Ser Ile Asn Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser			
85 90 95			
atc agt ggc gat ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc			336
Ile Ser Gly Asp Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser			
100 105 110			
ttc aca cat act cct cct ctg gat cca cag gaa ctg gat att ctg aaa			384
Phe Thr His Thr Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys			
115 120 125			
acc gta aag gaa atc aca ggg ttt ttg ctg att cag gct tgg cct gaa			432
Thr Val Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu			
130 135 140			
aac agg acg gac ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc			480
Asn Arg Thr Asp Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly			
145 150 155 160			
agg acc aag caa cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac			528
Arg Thr Lys Gln His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn			
165 170 175			
ata aca tcc ttg gga tta cgc tcc ctc aag gag ata agt gat gga gat			576
Ile Thr Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp			
180 185 190			
gtg ata att tca gga aac aaa aat ttg tgc tat gca aat aca ata aac			624
Val Ile Ile Ser Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn			
195 200 205			

tgg aaa aaa ctg ttt ggg acc tcc ggt cag aaa acc aaa att ata agc Trp Lys Lys Leu Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser 210 215 220	672
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ttg tgc tcc ccc gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc Leu Cys Ser Pro Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val 245 250 255	768
tct tgc cgg aat gtc agc cga ggc agg gaa tgc gtg gac aag tgc aac Ser Cys Arg Asn Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn 260 265 270	816
ctt ctg gag ggt gag cca agg gag ttt gtg gag aac tct gag tgc ata Leu Leu Glu Gly Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile 275 280 285	864
cag tgc cac cca gag tgc ctg cct cag gcc atg aac atc acc tgc aca Gln Cys His Pro Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr 290 295 300	912
gga cgg gga cca gac aac tgt atc cag tgt gcc cac tac att gac ggc Gly Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly 305 310 315 320	960
ccc cac tgc gtc aag acc tgc ccg gca gga gtc atg gga gaa aac aac Pro His Cys Val Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn 325 330 335	1008
acc ctg gtc tgg aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc Thr Leu Val Trp Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys 340 345 350	1056
cat cca aac tgc acc tac gga tgc act ggg cca ggt ctt gaa ggc tgt His Pro Asn Cys Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys 355 360 365	1104
cca acg aat ggg cct aag atc ccg tcc atc gcc act ggg atg gtg ggg Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly 370 375 380	1152
gcc ctc ctc ttg ctg ctg gtg gtc ctg ggg atc ggc ctc ttc atg Ala Leu Leu Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met 385 390 395 400	1200
cga agg cgc cac atc gtt cgg aag cgc acg ctg cgg agg ctg ctg cag Arg Arg Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln 405 410 415	1248
gag agg gag ctt gtg gag cct ctt aca ccc agt gga gaa gct ccc aac Glu Arg Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn 420 425 430	1296

caa gct ctc ttg agg atc ttg aag gaa act gaa ttc aaa aag atc aaa Gln Ala Leu Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys 435 440 445	1344
gtg ctg ggc tcc ggt gcg ttc ggc acg gtg tat aag gga ctc tgg atc Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile 450 455 460	1392
cca gaa ggt gag aaa gtt aaa att ccc gtc gct atc aag gaa tta aga Pro Glu Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg 465 470 475 480	1440
gaa gca aca tct ccg aaa gcc aac aag gaa atc ctc gat gaa gcc tac Glu Ala Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr 485 490 495	1488
gtg atg gcc agc gtg gac aac ccc cac gtg tgc cgc ctg ctg ggc atc Val Met Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile 500 505 510	1536
tgc ctc acc tcc acc gtg cag ctc atc acg cag ctc atg ccc ttc ggc Cys Leu Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly 515 520 525	1584
tgc ctc ctg gac tat gtc cgg gaa cac aaa gac aat att ggc tcc cag Cys Leu Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln 530 535 540	1632
tac ctg ctc aac tgg tgt gtg cag atc gca aag ggc atg aac tac ttg Tyr Leu Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu 545 550 555 560	1680
gag gac cgt cgc ttg gtg cac cgc gac ctg gca gcc agg aac gta ctg Glu Asp Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu 565 570 575	1728
gtg aaa aca ccg cag cat gtc aag atc aca gat ttt ggg ctg gcc aaa Val Lys Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys 580 585 590	1776
ctg ctg ggt gcg gaa gag aaa gaa tac cat gca gaa gga ggc aaa gtg Leu Leu Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val 595 600 605	1824
cct atc aag tgg atg gca ttg gaa tca att tta cac aga atc tat acc Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr 610 615 620	1872
cac cag agt gat gtc tgg agc tac ggg gtg acc gtt tgg gag ttg atg His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met 625 630 635 640	1920
acc ttt gga tcc aag cca tat gac gga atc cct gcc agc gag atc tcc Thr Phe Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser 645 650 655	1968
tcc atc ctg gag aaa gga gaa cgc ctc cct cag cca ccc ata tgt acc	2016

Ser Ile Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr			
660	665	670	
atc gat gtc tac atg atc atg gtc aag tgc tgg atg ata gac gca gat			2064
Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp			
675	680	685	
agt cgc cca aag ttc cgt gag ttg atc atc gaa ttc tcc aaa atg gcc			2112
Ser Arg Pro Lys Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala			
690	695	700	
cga gac ccc cag cgc tac ctt gtc att cag ggg gat gaa aga atg cat			2160
Arg Asp Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His			
705	710	715	720
ttg cca agt cct aca gac tcc aac ttc tac cgt gcc ctg atg gat gaa			2208
Leu Pro Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu			
725	730	735	
gaa gac atg gac gac gtg gtg gat gcc gac gag tac ctc atc cca cag			2256
Glu Asp Met Asp Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln			
740	745	750	
cag ggc ttc ttc agc agc ccc tcc acg tca cgg act ccc ctc ctg agc			2304
Gln Gly Phe Phe Ser Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser			
755	760	765	
tct ctg agt gca acc agc aac aat tcc acc gtg gct tgc att gat aga			2352
Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg			
770	775	780	
aat ggg ctg caa agc tgt ccc atc aag gaa gac agc ttc ttg cag cga			2400
Asn Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg			
785	790	795	800
tac agc tca gac ccc aca ggc gcc ttg act gag gac agc ata gac gac			2448
Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp Asp			
805	810	815	
acc ttc ctc cca gtg cct gaa tac ata aac cag tcc gtt ccc aaa agg			2496
Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg			
820	825	830	
ccc gct ggc tct gtg cag aat cct gtc tat cac aat cag cct ctg aac			2544
Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn			
835	840	845	
ccc gcg ccc agc aga gac cca cac tac cag gac ccc cac agc act gca			2592
Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala			
850	855	860	
gtg ggc aac ccc gag tat ctc aac act gtc cag ccc acc tgt gtc aac			2640
Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn			
865	870	875	880
agc aca ttc gac agc cct gcc cac tgg gcc cag aaa ggc agc cac caa			2688
Ser Thr Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln			

885

890

895

att agc ctg gac aac cct gac tac cag cag gac ttc ttt ccc aag gaa 2736  
 Ile Ser Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu  
 900 905 910

gcc aag cca aat ggc atc ttt aag ggc tcc aca gct gaa aat gca gaa 2784  
 Ala Lys Pro Asn Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu  
 915 920 925

tac cta agg gtc gcg cca caa agc agt gaa ttt att gga gca tga 2829  
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&lt;211&gt; 942

&lt;212&gt; PRT

&lt;213&gt; Human(homo sapiens)

&lt;400&gt; 12

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Val Thr Asp His Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr  
 35 40 45

Glu Met Glu Glu Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro  
 50 55 60

Cys Arg Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser  
 65 70 75 80

Leu Ser Ile Asn Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser  
 85 90 95

Ile Ser Gly Asp Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser  
 100 105 110

Phe Thr His Thr Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys  
 115 120 125

Thr Val Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu  
130 135 140

Asn Arg Thr Asp Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly  
145 150 155 160

Arg Thr Lys Gln His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn  
165 170 175

Ile Thr Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp  
180 185 190

Val Ile Ile Ser Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn  
195 200 205

Trp Lys Lys Leu Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser  
210 215 220

Asn Arg Gly Glu Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala  
225 230 235 240

Leu Cys Ser Pro Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val  
245 250 255

Ser Cys Arg Asn Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn  
260 265 270

Leu Leu Glu Gly Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile  
275 280 285

Gln Cys His Pro Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr  
290 295 300

Gly Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly  
305 310 315 320

Pro His Cys Val Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn  
325 330 335

Thr Leu Val Trp Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys  
340 345 350

His Pro Asn Cys Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys  
355 360 365

Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly  
370 375 380

Ala Leu Leu Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met  
385 390 395 400

Arg Arg Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln  
405 410 415

Glu Arg Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn  
420 425 430

Gln Ala Leu Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys  
435 440 445

Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile  
450 455 460

Pro Glu Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg  
465 470 475 480

Glu Ala Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr  
485 490 495

Val Met Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile  
500 505 510

Cys Leu Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly  
515 520 525

Cys Leu Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln  
530 535 540

Tyr Leu Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu  
545 550 555 560

Glu Asp Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu  
565 570 575

Val Lys Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys  
580 585 590

Leu Leu Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val  
595 600 605

Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr  
610 615 620

His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met  
625 630 635 640

Thr Phe Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser  
645 650 655

Ser Ile Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr  
660 665 670

Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp  
675 680 685

Ser Arg Pro Lys Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala  
690 695 700

Arg Asp Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His  
705 710 715 720

Leu Pro Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu  
725 730 735

Glu Asp Met Asp Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln  
740 745 750

Gln Gly Phe Phe Ser Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser  
755 760 765

Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg  
770 775 780

Asn Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg  
785 790 795 800

Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp Asp

805

810

815

Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg  
820 825 830

Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn  
835 840 845

Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala  
850 855 860

Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn  
865 870 875 880

Ser Thr Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln  
885 890 895

Ile Ser Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu  
900 905 910

Ala Lys Pro Asn Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu  
915 920 925

Tyr Leu Arg Val Ala Pro Gln Ser Ser Glu Phe Ile Gly Ala  
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gct ctc tgc gcc gca ggt ggg gct ttg gag gaa aag aaa gtc tgc caa			96
Ala Leu Cys Ala Ala Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln			
20	25	30	
ggc aca agt aac agg ctc acc caa ctg ggc act ttt gaa gac cac ttt			144
Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe			
35	40	45	
ctg agc ctg cag agg atg tac aac aac tgt gaa gtg gtc ctt ggg aac			192
Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn			
50	55	60	
ttg gaa att acc tat gtg caa agg aat tac gac ctt tcc ttc tta aag			240
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys			
65	70	75	80
acc atc cag gag gtg gcc ggc tat gtc ctc att gcc ctc aac acc gtg			288
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val			
85	90	95	
gag aga atc cct ttg gag aac ctg cag atc atc agg gga aat gct ctt			336
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu			
100	105	110	
tat gaa aac acc tat gcc tta gcc atc ctg tcc aac tat ggg aca aac			384
Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn			
115	120	125	
aga act ggg ctt agg gaa ctg ccc atg cgg aac tta cag gaa atc ctg			432
Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu			
130	135	140	
att ggt gct gtg cga ttc agc aac aac ccc atc ctc tgc aat atg gat			480
Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp			
145	150	155	160
act atc cag tgg agg gac atc gtc caa aac gtc ttt atg agc aac atg			528
Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met			
165	170	175	
tca atg gac tta cag agc cat ccg agc agt tgc ccc aaa tgt gat cca			576
Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro			
180	185	190	
agc tgt ccc aat gga agc tgc tgg gga gga gga gag gag aac tgc cag			624
Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Glu Glu Asn Cys Gln			
195	200	205	
aaa ttg acc aaa atc atc tgt gcc cag caa tgt tcc cat cgc tgt cgt			672
Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg			
210	215	220	
ggc agg tcc ccc agt gac tgc tgc cac aac caa tgt gct gcg ggg tgt			720
Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys			

225	230	235	240	
aca ggg ccc cga gag agt gac tgt ctg gtc tgc caa aag ttc caa gat				768
Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp				
245	250	255		
gag gcc aca tgc aaa gac acc tgc cca cca ctc atg ctg tac aac ccc				816
Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro				
260	265	270		
acc acc tat cag atg gat gtc aac cct gaa ggg aag tac agc ttt ggt				864
Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly				
275	280	285		
gcc acc tgt gtg aag aag tgc ccc cga aac tac gtg gtg aca gat cat				912
Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His				
290	295	300		
ggc tca tgt gtc cga gcc tgt ggg cct gac tac tac gaa gtg gaa gaa				960
Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu				
305	310	315	320	
gat ggc atc cgc aag tgt aaa aaa tgt gat ggg ccc tgt cgc aaa gtt				1008
Asp Gly Ile Arg Lys Cys Lys Cys Asp Gly Pro Cys Arg Lys Val				
325	330	335		
tgt aat ggc ata ggc att ggt gaa ttt aaa gac aca ctc tcc ata aat				1056
Cys Asn Gly Ile Gly Ile Glu Phe Lys Asp Thr Leu Ser Ile Asn				
340	345	350		
gct aca aac atc aaa cac ttc aaa tac tgc act gcc atc agc ggg gac				1104
Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp				
355	360	365		
ctt cac atc ctg cca gtg gcc ttt aag ggg gat tct ttc acg cgc act				1152
Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr				
370	375	380		
cct cct cta gac cca cga gaa cta gaa att cta aaa acc gta aag gaa				1200
Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu				
385	390	395	400	
ata aca ggc ttt ttg ctg att cag gct tgg cct gat aac tgg act gac				1248
Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp				
405	410	415		
ctc cat gct ttc gag aac cta gaa ata ata cgt ggc aga aca aag caa				1296
Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln				
420	425	430		
cat ggt cag ttt tct ttg gcg gtc gtt ggc ctg aac atc aca tca ctg				1344
His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu				
435	440	445		
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Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser				
450	455	460		

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acc tat gga tgt gct ggg cca ggt ctt caa gga tgt gaa gtg tgg cca Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro 625 630 635 640	1920
tct ggg cca aag ata cca tct att gcc act ggg att gtg ggt ggc ctc Ser Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu 645 650 655	1968
ctc ttc ata gtg gtg gcc ctt ggg att ggc cta ttc atg cga aga Leu Phe Ile Val Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg 660 665 670	2016
cgt cac att gtt cga aag cgt aca cta cgc cgc ctg ctt caa gag aga Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg 675 680 685	2064

gag ctc gtg gaa cct ctc aca ccc agc gga gaa gct cca aac caa gcc Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala 690 695 700	2112
cac ttg agg ata tta aag gaa aca gaa ttc aaa aag atc aaa gtt ctg His Leu Arg Ile Leu Lys Glu Thr Phe Lys Lys Ile Lys Val Leu 705 710 715 720	2160
ggt tcg gga gca ttt ggc aca gtg tat aag ggt ctc tgg atc cca gaa Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu 725 730 735	2208
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aca tct cca aaa gcc aac aaa gaa atc ctt gac gaa gcc tat gtg atg Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met 755 760 765	2304
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ctg gac tac gtc cga gaa cac aag gac aac att ggc tcc cag tac ctc Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu 805 810 815	2448
ctc aac tgg tgt gtg cag att gca aag ggc atg aac tac ctg gaa gat Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp 820 825 830	2496
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ggg tcc aag cct tat gat gga atc cca gca agt gac atc tca tcc atc	2784

Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile			
915	920	925	
ct a gag aaa gga gaa cgc ctt cca cag cca cct atc tgc acc atc gat		2832	
Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp			
930	935	940	
gtc tac atg atc atg gtc aag tgc tgg atg ata gat gct gat agc cgc		2880	
Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg			
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cca aag ttc cga gag ttg att ctt gaa ttc tcc aaa atg gcc cga gac		2928	
Pro Lys Phe Arg Glu Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp			
965	970	975	
cca cag cgc tac ctt gtt atc cag ggg gat gaa aga atg cat ttg cca		2976	
Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro			
980	985	990	
agc cct aca gac tcc aac ttt tac cga gcc ctg atg gat gaa gag gac		3024	
Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp			
995	1000	1005	
atg gag gat gta gtt gat gct gat gag tat ctt acc cca cag caa		3069	
Met Glu Asp Val Val Asp Ala Asp Glu Tyr Leu Thr Pro Gln Gln			
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ggc ttc ttc aac agc ccg tcc acg tcg agg act ccc ctc ttg agt		3114	
Gly Phe Phe Asn Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser			
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Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asn			
1040	1045	1050	
aga aat ggg agc tgc cgt gtc aaa gaa gac gcc ttc ttg cag cgg		3204	
Arg Asn Gly Ser Cys Arg Val Lys Glu Asp Ala Phe Leu Gln Arg			
1055	1060	1065	
tac agc tcc gac ccc aca ggt gct gta aca gag gac aac ata gat		3249	
Tyr Ser Ser Asp Pro Thr Gly Ala Val Thr Glu Asp Asn Ile Asp			
1070	1075	1080	
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Asp Ala Phe Leu Pro Val Pro Glu Tyr Val Asn Gln Ser Val Pro			
1085	1090	1095	
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Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln			
1100	1105	1110	
ccc ctg cat cca gct cct gga aga gac ctg cat tat caa aat ccc		3384	
Pro Leu His Pro Ala Pro Gly Arg Asp Leu His Tyr Gln Asn Pro			
1115	1120	1125	
cac agc aat gca gtg ggc aac cct gag tat ctc aac act gcc cag		3429	
His Ser Asn Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Ala Gln			

Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile			
915	920	925	
ct a gag aaa gga gaa cgc ctt cca cag cca cct atc tgc acc atc gat	2832		
Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp			
930	935	940	
gtc tac atg atc atg gtc aag tgc tgg atg ata gat gct gat agc cgc	2880		
Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg			
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cca aag ttc cga gag ttg att ctt gaa ttc tcc aaa atg gcc cga gac	2928		
Pro Lys Phe Arg Glu Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp			
965	970	975	
cca cag cgc tac ctt gtt atc cag ggg gat gaa aga atg cat ttg cca	2976		
Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro			
980	985	990	
agc cct aca gac tcc aac ttt tac cga gcc ctg atg gat gaa gag gac	3024		
Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp			
995	1000	1005	
atg gag gat gta gtt gat gct gat gag tat ctt acc cca cag caa	3069		
Met Glu Asp Val Val Asp Ala Asp Glu Tyr Leu Thr Pro Gln Gln			
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ggc ttc ttc aac agc ccg tcc acg tcg agg act ccc ctc ttg agt	3114		
Gly Phe Phe Asn Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser			
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tct ctg agt gca act agc aac aat tcc act gtg gct tgc att aat	3159		
Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asn			
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aga aat ggg agc tgc cgt gtc aaa gaa gac gcc ttc ttg cag cgg	3204		
Arg Asn Gly Ser Cys Arg Val Lys Glu Asp Ala Phe Leu Gln Arg			
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tac agc tcc gac ccc aca ggt gct gta aca gag gac aac ata gat	3249		
Tyr Ser Ser Asp Pro Thr Gly Ala Val Thr Glu Asp Asn Ile Asp			
1070	1075	1080	
gac gca ttc ctc cct gta cct gaa tat gta aac caa tct gtt ccc	3294		
Asp Ala Phe Leu Pro Val Pro Glu Tyr Val Asn Gln Ser Val Pro			
1085	1090	1095	
aag agg cca gca ggc tct gtg cag aac cct gtc tat cac aat cag	3339		
Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln			
1100	1105	1110	
ccc ctg cat cca gct cct gga aga gac ctg cat tat caa aat ccc	3384		
Pro Leu His Pro Ala Pro Gly Arg Asp Leu His Tyr Gln Asn Pro			
1115	1120	1125	
cac agc aat gca gtg ggc aac cct gag tat ctc aac act gcc cag	3429		
His Ser Asn Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Ala Gln			

1130	1135	1140	
cct acc tgt ctc agt agt ggg	ttt aac agc cct gca	ctc tgg atc	3474
Pro Thr Cys Leu Ser Ser Gly	Phe Asn Ser Pro Ala	Leu Trp Ile	
1145	1150	1155	
cag aaa ggc agt cac caa atg	agc cta gac aac cct	gac tac cag	3519
Gln Lys Gly Ser His Gln Met	Ser Leu Asp Asn Pro	Asp Tyr Gln	
1160	1165	1170	
cag gac ttc ttc ccc aag gaa	acc aag cca aat ggc	ata ttt aag	3564
Gln Asp Phe Phe Pro Lys Glu	Thr Lys Pro Asn Gly	Ile Phe Lys	
1175	1180	1185	
ggc ccc aca gct gaa aat gca	gag tac cta cggtgt	gca cct cca	3609
Gly Pro Thr Ala Glu Asn Ala	Glu Tyr Leu Arg Val	Ala Pro Pro	
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Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe			
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Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn			
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Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys			
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Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val			
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Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu  
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Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn  
115 120 125

Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp  
145 150 155 160

Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met  
165 170 175

Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro  
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Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg  
210 215 220

Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
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245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu  
305 310 315 320

Asp Gly Ile Arg Lys Cys Lys Cys Asp Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr  
370 375 380

Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu  
485 490 495

Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys  
610 615 620

Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro  
625 630 635 640

Ser Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu  
645 650 655

Leu Phe Ile Val Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg  
660 665 670

Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg  
675 680 685

Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala  
690 695 700

His Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu  
705 710 715 720

Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu  
725 730 735

Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala  
740 745 750

Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met  
755 760 765

Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu

770 775 780

Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu  
785 790 795 800

Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu  
805 810 815

Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp  
820 825 830

Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys  
835 840 845

Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu  
850 855 860

Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile  
865 870 875 880

Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln  
885 890 895

Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe  
900 905 910

Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile  
915 920 925

Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp  
930 935 940

Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg  
945 950 955 960

Pro Lys Phe Arg Glu Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp  
965 970 975

Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro  
980 985 990

Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp  
995 1000 1005

Met Glu Asp Val Val Asp Ala Asp Glu Tyr Leu Thr Pro Gln Gln  
1010 1015 1020

Gly Phe Phe Asn Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser  
1025 1030 1035

Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asn  
1040 1045 1050

Arg Asn Gly Ser Cys Arg Val Lys Glu Asp Ala Phe Leu Gln Arg  
1055 1060 1065

Tyr Ser Ser Asp Pro Thr Gly Ala Val Thr Glu Asp Asn Ile Asp  
1070 1075 1080

Asp Ala Phe Leu Pro Val Pro Glu Tyr Val Asn Gln Ser Val Pro  
1085 1090 1095

Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln  
1100 1105 1110

Pro Leu His Pro Ala Pro Gly Arg Asp Leu His Tyr Gln Asn Pro  
1115 1120 1125

His Ser Asn Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Ala Gln  
1130 1135 1140

Pro Thr Cys Leu Ser Ser Gly Phe Asn Ser Pro Ala Leu Trp Ile  
1145 1150 1155

Gln Lys Gly Ser His Gln Met Ser Leu Asp Asn Pro Asp Tyr Gln  
1160 1165 1170

Gln Asp Phe Phe Pro Lys Glu Thr Lys Pro Asn Gly Ile Phe Lys  
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Ala Leu Cys Ala Ala Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln  
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ggc aca agt aac agg ctc acc caa ctg ggc act ttt gaa gac cac ttt 144  
Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45  
ctg agc ctg cag agg atg tac aac aac tgt gaa gtg gtc ctt ggg aac 192  
Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn  
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ttg gaa att acc tat gtg caa agg aat tac gac ctt tcc ttc tta aag 240  
Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80  
acc atc cag gag gtg gcc ggc tat gtc ctc att gcc ctc aac acc gtg 288  
Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95  
gag aga atc cct ttg gag aac ctg cag atc atc agg gga aat gct ctt 336  
Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu  
100 105 110  
tat gaa aac acc tat gcc tta gcc atc ctg tcc aac tat ggg aca aac 384  
Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn  
115 120 125  
aga act ggg ctt agg gaa ctg ccc atg cggt aac tta cag gaa atc ctg 432  
Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

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ggc agg tcc ccc agt gac tgc tgc cac aac caa tgt gct gcg ggg tgt Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys 225 230 235 240	720
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gct aca aac atc aaa cac ttc aaa tac tgc act gcc atc agc ggg gac Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp 355 360 365	1104

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Lys	Tyr	Ala	Asp	Ala	Asn	Asn	Val	Cys	His	Leu	Cys	His	Ala	Asn	Cys	
610					615					620						
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Thr	Tyr	Gly	Val	Met	Val	Pro	Glu	Met	Leu	Leu	Gln	Ser	Ile	Ile	Leu	
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<211> 643

<212> PRT

<213> Ð;Éó(Mus musculus)

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Leu	Glu	Ile	Thr	Tyr	Val	Gln	Arg	Asn	Tyr	Asp	Leu	Ser	Phe	Leu	Lys	
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Glu	Arg	Ile	Pro	Leu	Glu	Asn	Leu	Gln	Ile	Ile	Arg	Gly	Asn	Ala	Leu	
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Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met  
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Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
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245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

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Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
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Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn  
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Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp  
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Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr  
370 375 380

Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu  
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Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp  
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Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
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Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
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Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu  
485 490 495

Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser  
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Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn  
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Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys  
610 615 620

Thr Tyr Gly Val Met Val Pro Glu Met Leu Leu Gln Ser Ile Ile Leu  
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Lys Pro Ile

<210> 17

<211> 1968

<212> DNA

<213> ♂; Éö (Mus musculus)

<220>

<221> CDS

<222> (1)..(1965)

<223>

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Ala Leu Cys Ala Ala Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln  
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ggc aca agt aac agg ctc acc caa ctg ggc act ttt gaa gac cac ttt 144  
Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe  
35 40 45

ctg agc ctg cag agg atg tac aac aac tgt gaa gtg gtc ctt ggg aac 192  
Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

ttg gaa att acc tat gtg caa agg aat tac gac ctt tcc ttc tta aag Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys 65 70 75 80	240
acc atc cag gag gtg gcc ggc tat gtc ctc att gcc ctc aac acc gtg Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val 85 90 95	288
gag aga atc cct ttg gag aac ctg cag atc atc agg gga aat gct ctt Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu 100 105 110	336
tat gaa aac acc tat gcc tta gcc atc ctg tcc aac tat ggg aca aac Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn 115 120 125	384
aga act ggg ctt agg gaa ctg ccc atg cg <sup>g</sup> aac tta cag gaa atc ctg Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu 130 135 140	432
att ggt gct gtg cga ttc agc aac aac ccc atc ctc tgc aat atg gat Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp 145 150 155 160	480
act atc cag tgg agg gac atc gtc caa aac gtc ttt atg agc aac atg Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met 165 170 175	528
tca atg gac tta cag agc cat ccg agc agt tgc ccc aaa tgt gat cca Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro 180 185 190	576
agc tgt ccc aat gga agc tgc tgg gga gga gga gag gag aac tgc cag Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Glu Glu Asn Cys Gln 195 200 205	624
aaa ttg acc aaa atc atc tgt gcc cag caa tgt tcc cat cgc tgt cgt Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg 210 215 220	672
ggc agg tcc ccc agt gac tgc tgc cac aac caa tgt gct gcg ggg tgt Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys 225 230 235 240	720
aca ggg ccc cga gag agt gac tgt ctg gtc tgc caa aag ttc caa gat Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp 245 250 255	768
gag gcc aca tgc aaa gac acc tgc cca cca ctc atg ctg tac aac ccc Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro 260 265 270	816
acc acc tat cag atg gat gtc aac cct gaa ggg aag tac agc ttt ggt Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly 275 280 285	864

gcc acc tgt gtg aag aag tgc ccc cga aac tac gtg gtg aca gat cat Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His 290 295 300	912
ggc tca tgt gtc cga gcc tgt ggg cct gac tac tac gaa gtc gaa gaa Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu 305 310 315 320	960
gat ggc atc cgc aag tgt aaa aaa tgt gat ggg ccc tgt cgc aaa gtt Asp Gly Ile Arg Lys Cys Lys Cys Asp Gly Pro Cys Arg Lys Val 325 330 335	1008
tgt aat ggc ata ggc att ggt gaa ttt aaa gac aca ctc tcc ata aat Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn 340 345 350	1056
gct aca aac atc aaa cac ttc aaa tac tgc act gcc atc agc ggg gac Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp 355 360 365	1104
ctt cac atc ctg cca gtg gcc ttt aag ggg gat tct ttc acg cgc act Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr 370 375 380	1152
cct cct cta gac cca cga gaa cta gaa att cta aaa acc gta aag gaa Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu 385 390 395 400	1200
ata aca ggc ttt ttg ctg att cag gct tgg cct gat aac tgg act gac Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp 405 410 415	1248
ctc cat gct ttc gag aac cta gaa ata ata cgt ggc aga aca aag caa Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln 420 425 430	1296
cat ggt cag ttt tct ttg gcg gtc gtt ggc ctg aac atc aca tca ctg His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu 435 440 445	1344
ggg ctg cgt tcc ctc aag gag atc agt gat ggg gat gtc atc att tct Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser 450 455 460	1392
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ttc ggg aca ccc aat cag aaa acc aaa atc atg aac aac aga gct gag Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu 485 490 495	1488
aaa gac tgc aag gcc gtg aac cac gtc tgc aat cct tta tgc tcc tcg Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser 500 505 510	1536
gaa ggc tgc tgg ggc cct gag ccc agg gac tgt gtc tcc tgc cag aat	1584

Glu	Gly	Cys	Trp	Gly	Pro	Glu	Pro	Arg	Asp	Cys	Val	Ser	Cys	Gln	Asn	
515						520					525					
gtg	agc	aga	ggc	agg	gag	tgc	gtg	gag	aaa	tgc	aac	atc	ctg	gag	ggg	1632
Val	Ser	Arg	Gly	Arg	Glu	Cys	Val	Glu	Lys	Cys	Asn	Ile	Leu	Glu	Gly	
530						535					540					
gaa	cca	agg	gag	ttt	gtg	gaa	aat	tct	gaa	tgc	atc	cag	tgc	cat	cca	1680
Glu	Pro	Arg	Glu	Phe	Val	Glu	Asn	Ser	Glu	Cys	Ile	Gln	Cys	His	Pro	
545						550					555				560	
gaa	tgt	ctg	ccc	cag	gcc	atg	aac	atc	acc	tgt	aca	ggc	agg	ggg	cca	1728
Glu	Cys	Leu	Pro	Gln	Ala	Met	Asn	Ile	Thr	Cys	Thr	Gly	Arg	Gly	Pro	
565						570					575					
gac	aac	tgc	atc	cag	tgt	gcc	cac	tac	att	gat	ggc	cca	cac	tgt	gtc	1776
Asp	Asn	Cys	Ile	Gln	Cys	Ala	His	Tyr	Ile	Asp	Gly	Pro	His	Cys	Val	
580						585					590					
aag	acc	tgc	cca	gct	ggc	atc	atg	gga	gag	aac	aac	act	ctg	gtc	tgg	1824
Lys	Thr	Cys	Pro	Ala	Gly	Ile	Met	Gly	Glu	Asn	Asn	Thr	Leu	Val	Trp	
595						600					605					
aag	tat	gca	gat	gcc	aat	aat	gtc	tgc	cac	cta	tgc	cac	gcc	aac	tgt	1872
Lys	Tyr	Ala	Asp	Ala	Asn	Asn	Val	Cys	His	Leu	Cys	His	Ala	Asn	Cys	
610						615					620					
acc	tat	gga	tgt	gct	ggg	cca	ggt	ctt	caa	gga	tgt	gaa	gtg	tgg	cca	1920
Thr	Tyr	Gly	Cys	Ala	Gly	Pro	Gly	Leu	Gln	Gly	Cys	Glu	Val	Trp	Pro	
625						630					635				640	
tct	ggg	tac	gtt	caa	tgg	cag	tgg	atc	tta	aag	acc	ttt	tgg	atc	taa	1968
Ser	Gly	Tyr	Val	Gln	Trp	Gln	Trp	Ile	Leu	Lys	Thr	Phe	Trp	Ile		
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				20				25				30				
Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe																

35

40

45

Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn  
50 55 60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys  
65 70 75 80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val  
85 90 95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu  
100 105 110

Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn  
115 120 125

Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu  
130 135 140

Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp  
145 150 155 160

Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met  
165 170 175

Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro  
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Glu Glu Asn Cys Gln  
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg  
210 215 220

Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys  
225 230 235 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp  
245 250 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro  
260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly  
275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His  
290 295 300 305

Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu  
305 310 315 320

Asp Gly Ile Arg Lys Cys Lys Cys Asp Gly Pro Cys Arg Lys Val  
325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn  
340 345 350

Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp  
355 360 365

Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr  
370 375 380

Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu  
385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp  
405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln  
420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu  
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser  
450 455 460

Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu  
465 470 475 480

Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu  
485 490 495

Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser  
500 505 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn  
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly  
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro  
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro  
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val  
580 585 590

Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp  
595 600 605

Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys  
610 615 620

Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro  
625 630 635 640

Ser Gly Tyr Val Gln Trp Gln Trp Ile Leu Lys Thr Phe Trp Ile  
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gtc ctg gtg cta ctg ctg ggc gtc gcg ctg tgt tcc gcc gtg gag			96
Val Leu Val Leu Leu Leu Gly Val Ala Leu Cys Ser Ala Val Glu			
20 25 30			
gag aag aaa gtt tgt caa ggg aca aat aac aag ttg acc cag ctg ggg			144
Glu Lys Lys Val Cys Gln Gly Thr Asn Asn Lys Leu Thr Gln Leu Gly			
35 40 45			
cac gtg gaa gac cat ttc acc agc ctg cag aga atg tac aac aac tgc			192
His Val Glu Asp His Phe Thr Ser Leu Gln Arg Met Tyr Asn Asn Cys			
50 55 60			
gaa gtg gta ctg agt aac ctg gag att acc tac gtg gag cat aat cgc			240
Glu Val Val Leu Ser Asn Leu Glu Ile Thr Tyr Val Glu His Asn Arg			
65 70 75 80			
gat ctc acc ttc ctt aag acc ata cag gag gtt gca ggc tat gtg ctc			288
Asp Leu Thr Phe Leu Lys Thr Ile Gln Glu Val Ala Gly Tyr Val Leu			
85 90 95			
att gcg ctt aac atg gtg gac gtc att ccc tta gaa aac ctc cag att			336
Ile Ala Leu Asn Met Val Asp Val Ile Pro Leu Glu Asn Leu Gln Ile			
100 105 110			
atc cga ggg aat gtg ctt tat gac aac tct ttt gcc ctg gca gtt tta			384
Ile Arg Gly Asn Val Leu Tyr Asp Asn Ser Phe Ala Leu Ala Val Leu			
115 120 125			
tcc aat tac cac atg aat aaa acc cag gga ctt cga gag ctg cca atg			432
Ser Asn Tyr His Met Asn Lys Thr Gln Gly Leu Arg Glu Leu Pro Met			
130 135 140			
aaa cgg cta tca gaa att ctc aat gga ggt gtt aaa atc agc aac aac			480
Lys Arg Leu Ser Glu Ile Leu Asn Gly Gly Val Lys Ile Ser Asn Asn			
145 150 155 160			
ccc aaa ctg tgc aac atg gac act gtt ctc tgg aat gac atc att gat			528
Pro Lys Leu Cys Asn Met Asp Thr Val Leu Trp Asn Asp Ile Ile Asp			
165 170 175			
aca agc agg aag cct ctc aca gta ctt gac ttt gca agc aat ctt tct			576
Thr Ser Arg Lys Pro Leu Thr Val Leu Asp Phe Ala Ser Asn Leu Ser			
180 185 190			
tct tgt cca aaa tgc cat ccg aac tgc aca gaa gac cac tgc tgg ggt			624
Ser Cys Pro Lys Cys His Pro Asn Cys Thr Glu Asp His Cys Trp Gly			
195 200 205			

gct ggt gaa cag aac tgc cag act tta aca aaa gtc atc tgt gcc cag Ala Gly Gln Asn Cys Gln Thr Leu Thr Lys Val Ile Cys Ala Gln 210 215 220	672
caa tgc tct ggc cgg tgc aga gga aag gtg ccc agt gac tgc tgc cac Gln Cys Ser Gly Arg Cys Arg Gly Lys Val Pro Ser Asp Cys Cys His 225 230 235 240	720
aat cag tgt gct gca ggg tgc aca gga cct cgg gag agt gac tgc ctg Asn Gln Cys Ala Ala Gly Cys Thr Gly Pro Arg Glu Ser Asp Cys Leu 245 250 255	768
gca tgc cgc aag ttt cgg gat gat gct acc tgc aag gac aca tgt ccc Ala Cys Arg Lys Phe Arg Asp Asp Ala Thr Cys Lys Asp Thr Cys Pro 260 265 270	816
cca ctg gtc ctc tat aac ccc acc acc tat caa atg gat gtc aac cct Pro Leu Val Leu Tyr Asn Pro Thr Thr Tyr Gln Met Asp Val Asn Pro 275 280 285	864
gag gga aaa tac agc ttt gga gcc act tgt gtg agg gaa tgt cca cac Glu Gly Lys Tyr Ser Phe Gly Ala Thr Cys Val Arg Glu Cys Pro His 290 295 300	912
aac tat gtg gtg aca gat cat ggc tcc tgc gtt cgc tcg tgt aat act Asn Tyr Val Val Thr Asp His Gly Ser Cys Val Arg Ser Cys Asn Thr 305 310 315 320	960
gat act tac gaa gtg gaa gaa aat ggt gtt cgg aag tgt aaa aaa tgt Asp Thr Tyr Glu Val Glu Asn Gly Val Arg Lys Cys Lys Cys 325 330 335	1008
gat ggg cta tgt agc aaa gtg tgc aat ggc att gga ata ggt gaa ctt Asp Gly Leu Cys Ser Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Leu 340 345 350	1056
aaa ggg atc cta tcc ata aat gcc aca aac atc gac tcc ttc aaa aac Lys Gly Ile Leu Ser Ile Asn Ala Thr Asn Ile Asp Ser Phe Lys Asn 355 360 365	1104
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ggg gat gcc ttc aca aag aca cta ccc ctt gac cct aag aag ctg gat Gly Asp Ala Phe Thr Lys Thr Leu Pro Leu Asp Pro Lys Lys Leu Asp 385 390 395 400	1200
gtc ttt aga aca gtc aaa gaa ata tca gga ttt ttg ttg att cag gcc Val Phe Arg Thr Val Lys Glu Ile Ser Gly Phe Leu Leu Ile Gln Ala 405 410 415	1248
tgg cct gat aat gct act gat ctc tat gct ttt gaa aat ctg gag att Trp Pro Asp Asn Ala Thr Asp Leu Tyr Ala Phe Glu Asn Leu Glu Ile 420 425 430	1296
atc cga ggc cga acc aag cag cac ggc cag tat tcc ctt gct gtt gtt	1344

Ile Arg Gly Arg Thr Lys Gln His Gly Gln Tyr Ser Leu Ala Val Val		
435	440	445
aac ttg aaa ata cag tcg ttg ggg ctg cgc tcc ctc aag gaa ata agt		1392
Asn Leu Lys Ile Gln Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser		
450	455	460
gat gga gac att gcc att atg aag aac aag aac ctc tgc tat gct gac		1440
Asp Gly Asp Ile Ala Ile Met Lys Asn Lys Asn Leu Cys Tyr Ala Asp		
465	470	475
acc atg aac tgg cgc agc ttg ttt gct act cag agt cag aaa aca aaa		1488
Thr Met Asn Trp Arg Ser Leu Phe Ala Thr Gln Ser Gln Lys Thr Lys		
485	490	495
att ata cag aac aga aat aaa aat gat tgt act gct gac agg cat gtg		1536
Ile Ile Gln Asn Arg Asn Lys Asn Asp Cys Thr Ala Asp Arg His Val		
500	505	510
tgt gac ccg ctg tgc tcg gac gtg ggc tgc tgg ggc cca ggg ccc ttc		1584
Cys Asp Pro Leu Cys Ser Asp Val Gly Cys Trp Gly Pro Gly Pro Phe		
515	520	525
cac tgc ttt tcc tgc agg ttt ttc agt cgc cag aag gag tgt gta aaa		1632
His Cys Phe Ser Cys Arg Phe Phe Ser Arg Gln Lys Glu Cys Val Lys		
530	535	540
cag tgc aac atc ctg caa ggg gag cca cgt gag ttt gaa aga gac tcc		1680
Gln Cys Asn Ile Leu Gln Gly Glu Pro Arg Glu Phe Glu Arg Asp Ser		
545	550	555
aaa tgc ctc ccc tgc cac tca gag tgt ctg gta cag aac tcc act gca		1728
Lys Cys Leu Pro Cys His Ser Glu Cys Leu Val Gln Asn Ser Thr Ala		
565	570	575
tac aac aca acc tgc tct gga ccg ggc cca gac cac tgc atg aag tgt		1776
Tyr Asn Thr Thr Cys Ser Gly Pro Gly Pro Asp His Cys Met Lys Cys		
580	585	590
gcc cat ttt ata gat ggt ccc cac tgt gtg aag gcc tgc ccc gct ggg		1824
Ala His Phe Ile Asp Gly Pro His Cys Val Lys Ala Cys Pro Ala Gly		
595	600	605
gtc ctg ggt gag aat gat acc ctg gtc tgg aag tat gca gat gcc aat		1872
Val Leu Gly Glu Asn Asp Thr Leu Val Trp Lys Tyr Ala Asp Ala Asn		
610	615	620
gct gtt tgc cag ctc tgc cat cca aac tgt aca cga ggg tgc aaa ggg		1920
Ala Val Cys Gln Leu Cys His Pro Asn Cys Thr Arg Gly Cys Lys Gly		
625	630	635
cca ggt ctt gaa gga tgt cca aat ggc tcc aaa act cca tct		1962
Pro Gly Leu Glu Gly Cys Pro Asn Gly Ser Lys Thr Pro Ser		
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<212> PRT

<213> 41

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Val Leu Val Leu Leu Leu Gly Val Ala Leu Cys Ser Ala Val Glu  
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Glu Lys Lys Val Cys Gln Gly Thr Asn Asn Lys Leu Thr Gln Leu Gly  
35 40 45

His Val Glu Asp His Phe Thr Ser Leu Gln Arg Met Tyr Asn Asn Cys  
50 55 60

Glu Val Val Leu Ser Asn Leu Glu Ile Thr Tyr Val Glu His Asn Arg  
65 70 75 80

Asp Leu Thr Phe Leu Lys Thr Ile Gln Glu Val Ala Gly Tyr Val Leu  
85 90 95

Ile Ala Leu Asn Met Val Asp Val Ile Pro Leu Glu Asn Leu Gln Ile  
100 105 110

Ile Arg Gly Asn Val Leu Tyr Asp Asn Ser Phe Ala Leu Ala Val Leu  
115 120 125

Ser Asn Tyr His Met Asn Lys Thr Gln Gly Leu Arg Glu Leu Pro Met  
130 135 140

Lys Arg Leu Ser Glu Ile Leu Asn Gly Gly Val Lys Ile Ser Asn Asn  
145 150 155 160

Pro Lys Leu Cys Asn Met Asp Thr Val Leu Trp Asn Asp Ile Ile Asp  
165 170 175

Thr Ser Arg Lys Pro Leu Thr Val Leu Asp Phe Ala Ser Asn Leu Ser  
180 185 190

Ser Cys Pro Lys Cys His Pro Asn Cys Thr Glu Asp His Cys Trp Gly  
195 200 205

Ala Gly Glu Gln Asn Cys Gln Thr Leu Thr Lys Val Ile Cys Ala Gln  
210 215 220

Gln Cys Ser Gly Arg Cys Arg Gly Lys Val Pro Ser Asp Cys Cys His  
225 230 235 240

Asn Gln Cys Ala Ala Gly Cys Thr Gly Pro Arg Glu Ser Asp Cys Leu  
245 250 255

Ala Cys Arg Lys Phe Arg Asp Asp Ala Thr Cys Lys Asp Thr Cys Pro  
260 265 270

Pro Leu Val Leu Tyr Asn Pro Thr Thr Tyr Gln Met Asp Val Asn Pro  
275 280 285

Glu Gly Lys Tyr Ser Phe Gly Ala Thr Cys Val Arg Glu Cys Pro His  
290 295 300

Asn Tyr Val Val Thr Asp His Gly Ser Cys Val Arg Ser Cys Asn Thr  
305 310 315 320

Asp Thr Tyr Glu Val Glu Glu Asn Gly Val Arg Lys Cys Lys Lys Cys  
325 330 335

Asp Gly Leu Cys Ser Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Leu  
340 345 350

Lys Gly Ile Leu Ser Ile Asn Ala Thr Asn Ile Asp Ser Phe Lys Asn  
355 360 365

Cys Thr Lys Ile Asn Gly Asp Val Ser Ile Leu Pro Val Ala Phe Leu  
370 375 380

Gly Asp Ala Phe Thr Lys Thr Leu Pro Leu Asp Pro Lys Lys Leu Asp  
385 390 395 400

Val Phe Arg Thr Val Lys Glu Ile Ser Gly Phe Leu Leu Ile Gln Ala  
405 410 415

Trp Pro Asp Asn Ala Thr Asp Leu Tyr Ala Phe Glu Asn Leu Glu Ile  
420 425 430

Ile Arg Gly Arg Thr Lys Gln His Gly Gln Tyr Ser Leu Ala Val Val  
435 440 445

Asn Leu Lys Ile Gln Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser  
450 455 460

Asp Gly Asp Ile Ala Ile Met Lys Asn Lys Asn Leu Cys Tyr Ala Asp  
465 470 475 480

Thr Met Asn Trp Arg Ser Leu Phe Ala Thr Gln Ser Gln Lys Thr Lys  
485 490 495

Ile Ile Gln Asn Arg Asn Lys Asn Asp Cys Thr Ala Asp Arg His Val  
500 505 510

Cys Asp Pro Leu Cys Ser Asp Val Gly Cys Trp Gly Pro Gly Pro Phe  
515 520 525

His Cys Phe Ser Cys Arg Phe Phe Ser Arg Gln Lys Glu Cys Val Lys  
530 535 540

Gln Cys Asn Ile Leu Gln Gly Glu Pro Arg Glu Phe Glu Arg Asp Ser  
545 550 555 560

Lys Cys Leu Pro Cys His Ser Glu Cys Leu Val Gln Asn Ser Thr Ala  
565 570 575

Tyr Asn Thr Thr Cys Ser Gly Pro Gly Pro Asp His Cys Met Lys Cys  
580 585 590

Ala His Phe Ile Asp Gly Pro His Cys Val Lys Ala Cys Pro Ala Gly  
595 600 605

Val Leu Gly Glu Asn Asp Thr Leu Val Trp Lys Tyr Ala Asp Ala Asn  
610 615 620

Ala Val Cys Gln Leu Cys His Pro Asn Cys Thr Arg Gly Cys Lys Gly  
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agc agc tcc atc ttg tcg gtg ctg ctg atc ctc gcc tgc atg gca tcc 96  
Ser Ser Ser Ile Leu Ser Val Leu Leu Ile Leu Ala Cys Met Ala Ser  
20 25 30  
atc acc aca agc tca tcg gtc agc aat gcc ggc tat gtg gat aat ggc 144  
Ile Thr Thr Ser Ser Val Ser Asn Ala Gly Tyr Val Asp Asn Gly  
35 40 45  
aat atg aaa gtc tgc atc ggc act aaa tct cgg ctc tcc gtg ccc tcc 192  
Asn Met Lys Val Cys Ile Gly Thr Lys Ser Arg Leu Ser Val Pro Ser  
50 55 60  
aac aag gaa cat cat tac cga aac ctc aga gat cgg tac acg aac tgt 240  
Asn Lys Glu His His Tyr Arg Asn Leu Arg Asp Arg Tyr Thr Asn Cys  
65 70 75 80  
acg tat gtg gat ggc aac ttg aaa ctg acc tgg cta ccc aac gag aat 288  
Thr Tyr Val Asp Gly Asn Leu Lys Leu Thr Trp Leu Pro Asn Glu Asn  
85 90 95  
ttg gac ctc agc ttc cta gac aac ata cgg gag gtc acc ggc tat att 336  
Leu Asp Leu Ser Phe Leu Asp Asn Ile Arg Glu Val Thr Gly Tyr Ile  
100 105 110  
ctg atc agt cat gtg gac gtt aag aaa gtg gtg ttt ccc aaa cta caa 384  
Leu Ile Ser His Val Asp Val Lys Lys Val Val Phe Pro Lys Leu Gln  
115 120 125

atc att cgc gga cgc acg ctg ttc agc tta tcc gtg gag gag gag aag Ile Ile Arg Gly Arg Thr Leu Phe Ser Leu Ser Val Glu Glu Glu Lys 130 135 140	432
tat gcc ttg ttc gtc act tat tcc aaa atg tac acg ctg gag att ccc Tyr Ala Leu Phe Val Thr Tyr Ser Lys Met Tyr Thr Leu Glu Ile Pro 145 150 155 160	480
gat cta cgc gat gtc tta aat ggc caa gtg ggc ttc cac aac aac tac Asp Leu Arg Asp Val Leu Asn Gly Gln Val Gly Phe His Asn Asn Tyr 165 170 175	528
aat ctc tgc cac atg cga acg atc cag tgg tcg gag att gta tcc aac Asn Leu Cys His Met Arg Thr Ile Gln Trp Ser Glu Ile Val Ser Asn 180 185 190	576
ggc acg gat gca tac tac aac tac gac ttt act gct ccg gag cgc gag Gly Thr Asp Ala Tyr Tyr Asn Tyr Asp Phe Thr Ala Pro Glu Arg Glu 195 200 205	624
tgt ccc aag tgc cac gag agc tgc acg cac gga tgt tgg ggc gag ggt Cys Pro Lys Cys His Glu Ser Cys Thr His Gly Cys Trp Gly Glu Gly 210 215 220	672
ccc aag aat tgc cag aag ttc agc aag ctc acc tgc tcg cca cag tgt Pro Lys Asn Cys Gln Lys Phe Ser Lys Leu Thr Cys Ser Pro Gln Cys 225 230 235 240	720
gcc gga ggt cgt tgc tat gga cca aag ccg ccg gag tgt tgt cac ctc Ala Gly Gly Arg Cys Tyr Gly Pro Lys Pro Arg Glu Cys Cys His Leu 245 250 255	768
ttc tgc gcc gga tgc act ggt ccc acg caa aag gat tgc atc gcc Phe Cys Ala Gly Gly Cys Thr Gly Pro Thr Gln Lys Asp Cys Ile Ala 260 265 270	816
tgc aag aac ttc ttc gac gag gca gta tca aag gag gaa tgc ccg ccc Cys Lys Asn Phe Asp Glu Ala Val Ser Lys Glu Glu Cys Pro Pro 275 280 285	864
atg cgc aag tac aat ccc acc acc tat gtt ctt gaa acg aat cct gag Met Arg Lys Tyr Asn Pro Thr Thr Tyr Val Leu Glu Thr Asn Pro Glu 290 295 300	912
gga aag tat gcc tat ggt gcc acc tgc gtc aag gag tgt ccc ggt cat Gly Lys Tyr Ala Tyr Gly Ala Thr Cys Val Lys Glu Cys Pro Gly His 305 310 315 320	960
ctg ttg cgg gat aat ggc gcc tgc gtg cgc agc tgt ccc cag gag aag Leu Leu Arg Asp Asn Gly Ala Cys Val Arg Ser Cys Pro Gln Asp Lys 325 330 335	1008
atg gac aag ggg ggc gag tgt gtg ccc tgc aat gga ccg tgc ccc aaa Met Asp Lys Gly Gly Glu Cys Val Pro Cys Asn Gly Pro Cys Pro Lys 340 345 350	1056
acc tgc ccg ggc gtt act gtc ctg cat gcc ggc aac att gac tcg ttc	1104

Thr Cys Pro Gly Val Thr Val Leu His Ala Gly Asn Ile Asp Ser Phe			
355	360	365	
cgg aat tgt acg gtg atc gat ggc aac att cgc att ttg gat cag acc			1152
Arg Asn Cys Thr Val Ile Asp Gly Asn Ile Arg Ile Leu Asp Gln Thr			
370	375	380	
ttc tcg ggc ttc cag gat gtc tat gcc aac tac acg atg gga cca cga			1200
Phe Ser Gly Phe Gln Asp Val Tyr Ala Asn Tyr Thr Met Gly Pro Arg			
385	390	395	400
tac ata ccg ctg gat ccc gag cga cgg gag gtg ttc tcc acg gtg aag			1248
Tyr Ile Pro Leu Asp Pro Glu Arg Arg Glu Val Phe Ser Thr Val Lys			
405	410	415	
gag atc acc ggg tat ctg aat atc gag gga acc cac ccg cag ttc cgg			1296
Glu Ile Thr Gly Tyr Leu Asn Ile Glu Gly Thr His Pro Gln Phe Arg			
420	425	430	
aat ctg tcg tac ttt cgc aat ctg gaa aca att cat ggc cgc cag ctg			1344
Asn Leu Ser Tyr Phe Arg Asn Leu Glu Thr Ile His Gly Arg Gln Leu			
435	440	445	
atg gag agc atg ttt gcc gct ttg gcg atc gtt aag tca tcc ctg tac			1392
Met Glu Ser Met Phe Ala Ala Leu Ala Ile Val Lys Ser Ser Leu Tyr			
450	455	460	
agc ctg gag atg cgc aat ctg aag cag att agt tcc ggc agt gtg gtc			1440
Ser Leu Glu Met Arg Asn Leu Lys Gln Ile Ser Ser Gly Ser Val Val			
465	470	475	480
atc cag cat aat aga gac ctc tgc tac gta agc aat atc cgt tgg ccg			1488
Ile Gln His Asn Arg Asp Leu Cys Tyr Val Ser Asn Ile Arg Trp Pro			
485	490	495	
gcc att cag aag gag ccc gaa cag aag gtg tgg gtc aac gag aat ctc			1536
Ala Ile Gln Lys Glu Pro Glu Gln Lys Val Trp Val Asn Glu Asn Leu			
500	505	510	
agg gcg gat cta tgc gag aaa aat gga acc att tgc tcg gat cag tgc			1584
Arg Ala Asp Leu Cys Glu Lys Asn Gly Thr Ile Cys Ser Asp Gln Cys			
515	520	525	
aac gag gac ggc tgc tgg gga gct ggc acg gat cag tgc ctt acc tgc			1632
Asn Glu Asp Gly Cys Trp Gly Ala Gly Thr Asp Gln Cys Leu Thr Cys			
530	535	540	
aag aac ttc aat ttc aat ggc acc tgc atc gcc gac tgt ggt tat ata			1680
Lys Asn Phe Asn Phe Asn Gly Thr Cys Ile Ala Asp Cys Gly Tyr Ile			
545	550	555	560
tcc aat gcc tac aag ttt gac aat aga acg tgc aag ata tgc cat cca			1728
Ser Asn Ala Tyr Lys Phe Asp Asn Arg Thr Cys Lys Ile Cys His Pro			
565	570	575	
gag tgc cgg act tgc aat gga gct gga gca gat cac tgc cag gag tgc			1776
Glu Cys Arg Thr Cys Asn Gly Ala Gly Ala Asp His Cys Gln Glu Cys			

580	585	590	
gtc cat gtg agg gac ggt cag cac tgt gtg tcc gag tgc ccg aag aac Val His Val Arg Asp Gly Gln His Cys Val Ser Glu Cys Pro Lys Asn			1824
595	600	605	
aag tac aac gat cgt ggt gtc tgc cga gag tgc cac gcc acc tgc gat Lys Tyr Asn Asp Arg Gly Val Cys Arg Glu Cys His Ala Thr Cys Asp			1872
610	615	620	
gga tgc act ggg ccc aag gac acc atc ggc att gga gcg tgt acg acg Gly Cys Thr Gly Pro Lys Asp Thr Ile Gly Ile Gly Ala Cys Thr Thr			1920
625	630	635	640
tgc aat ttg gcc att atc aac aat gac gcc aca gta aaa cgc tgc ctg Cys Asn Leu Ala Ile Ile Asn Asn Asp Ala Thr Val Lys Arg Cys Leu			1968
645	650	655	
ctg aag gac gac aag tgc ccc gat ggg tat ttc tgg gag tat gtg cat Leu Lys Asp Asp Lys Cys Pro Asp Gly Tyr Phe Trp Glu Tyr Val His			2016
660	665	670	
ccg caa gag cag gga tcg ctg aag cca ttg gcc ggc aga gca gtt tgc Pro Gln Glu Gln Gly Ser Leu Lys Pro Leu Ala Gly Arg Ala Val Cys			2064
675	680	685	
cga aag tgc cat ccc ctt tgc gag ctg tgc acg aac tac gga tac cat Arg Lys Cys His Pro Leu Cys Glu Leu Cys Thr Asn Tyr Gly Tyr His			2112
690	695	700	
gaa cag gtg tgc tcc aag tgc acc cac tac aag cga cgg gag cag tgc Glu Gln Val Cys Ser Lys Cys Thr His Tyr Lys Arg Arg Glu Gln Cys			2160
705	710	715	720
gag acc gag tgt ccg gcc gat cac tac acg gat gag gag cag cgc gag Glu Thr Glu Cys Pro Ala Asp His Tyr Thr Asp Glu Glu Gln Arg Glu			2208
725	730	735	
tgc ttc cag cgc cac ccg gaa tgc aat ggt tgc acg ggt ccg ggt gcc Cys Phe Gln Arg His Pro Glu Cys Asn Gly Cys Thr Gly Pro Gly Ala			2256
740	745	750	
gac gat tgc aag tct tgc cgc aac ttt aag ttg ttc gac gcg aat gag Asp Asp Cys Lys Ser Cys Arg Asn Phe Lys Leu Phe Asp Ala Asn Glu			2304
755	760	765	
acg ggt ccc tat gtg aac tcc acg atg ttc aat tgc acc tcg aag tgt Thr Gly Pro Tyr Val Asn Ser Thr Met Phe Asn Cys Thr Ser Lys Cys			2352
770	775	780	
ccc ttg gag atg cga cat gtg aac tat cag tac acg gcc att gga ccc Pro Leu Glu Met Arg His Val Asn Tyr Gln Tyr Thr Ala Ile Gly Pro			2400
785	790	795	800
tac tgc gca gct agt ccg ccg agg agc agc aag ata act gcc aat ctg Tyr Cys Ala Ala Ser Pro Pro Arg Ser Ser Lys Ile Thr Ala Asn Leu			2448
805	810	815	

gat gtg aac atg atc ttc att atc act ggt gct gtt ctg gtg ccg acg		2496	
Asp Val Asn Met Ile Phe Ile Ile Thr Gly Ala Val Leu Val Pro Thr			
820	825	830	
atc tgc atc ctc tgc gtc aca tac att tgt cgg caa aag caa aag		2544	
Ile Cys Ile Leu Cys Val Val Thr Tyr Ile Cys Arg Gln Lys Gln Lys			
835	840	845	
gcc aag aag gaa aca gtc aag atg acc atg gct ctg tct ggc tgc gag		2592	
Ala Lys Lys Glu Thr Val Lys Met Thr Met Ala Leu Ser Gly Cys Glu			
850	855	860	
gat tcc gag ccg ctg cgt ccc tcg aac att gga gcc aac cta tgc aag		2640	
Asp Ser Glu Pro Leu Arg Pro Ser Asn Ile Gly Ala Asn Leu Cys Lys			
865	870	875	880
ttg cgc att gtc aag gac gcc gag ttg cgc aag ggc gga gtc ctt gga		2688	
Leu Arg Ile Val Lys Asp Ala Glu Leu Arg Lys Gly Gly Val Leu Gly			
885	890	895	
atg gga gcc ttt gga cga gtg tac aag ggc gtt tgg gtg ccg gag ggt		2736	
Met Gly Ala Phe Gly Arg Val Tyr Lys Gly Val Trp Val Pro Glu Gly			
900	905	910	
gag aac gtc aag att cca gtg gcc att aag gag ctg ctc aag tcc aca		2784	
Glu Asn Val Lys Ile Pro Val Ala Ile Lys Glu Leu Leu Lys Ser Thr			
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ggc gcc gag tca agc gaa gag ttc ctc cgc gaa gcc tac atc atg gcc		2832	
Gly Ala Glu Ser Ser Glu Glu Phe Leu Arg Glu Ala Tyr Ile Met Ala			
930	935	940	
tct gag gag cac gtt aat ctg ctg aag ctc ctg gcc gtg tgc atg tcc		2880	
Ser Glu Glu His Val Asn Leu Leu Lys Leu Leu Ala Val Cys Met Ser			
945	950	955	960
tca caa atg atg cta atc acg caa ctg atg ccg ctt ggc tgc ctg ttg		2928	
Ser Gln Met Met Leu Ile Thr Gln Leu Met Pro Leu Gly Cys Leu Leu			
965	970	975	
gac tat gtg cga aat aac cgg gac aag atc ggc tct aag gct ctg ctc		2976	
Asp Tyr Val Arg Asn Asn Arg Asp Lys Ile Gly Ser Lys Ala Leu Leu			
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Asn Trp Ser Thr Gln Ile Ala Lys Gly Met Ser Tyr Leu Glu Glu Lys			
995	1000	1005	
cga ctg gtc cac aga gac ttg gct gcc cgc aat gtc ctg gtg cag		3069	
Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Gln			
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Thr Pro Ser Leu Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu			
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Pro Ile Lys Trp Leu Ala Leu		Glu Cys Ile Arg Asn		Arg Val Phe	
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Thr Ser Lys Ser Asp Val Trp		Ala Phe Gly Val Thr		Ile Trp Glu	
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Leu Leu Thr Phe Gly Gln Arg		Pro His Glu Asn Ile		Pro Ala Lys	
gat att ccc gat ctt att gaa	1100	gag cag ccg	1105	gag cag ccg	3339
Asp Ile Pro Asp Leu Ile Glu		Val Gly Leu Lys Leu		Glu Gln Pro	
gag att tgt tcg ctg gac att	1115	tac tgt aca ctg ctc	1120	tcg tgc tgg	3384
Glu Ile Cys Ser Leu Asp Ile		Tyr Cys Thr Leu Leu		Ser Cys Trp	
cac ttg gat gcc gcc atg cgt	1130	1135	1140	1145	3429
His Leu Asp Ala Ala Met Arg		Pro Thr Phe Lys Gln		Leu Thr Thr	
gtc ttt gct gag ttc gcc aga	1145	gat ccg ggt cgc tat	1150	ctg gcc att	3474
Val Phe Ala Glu Phe Ala Arg		Asp Pro Gly Arg Tyr		Leu Ala Ile	
ccc ggg gat aag ttc acc cgg	1160	ctg ccg gct tac acg	1165	1170	3519
Pro Gly Asp Lys Phe Thr Arg		Leu Pro Ala Tyr Thr		Ser Gln Asp	
gag aag gat ctc atc cga aaa	1175	ttg gct ccc acc acc	1180	gat ggg tcc	3564
Glu Lys Asp Leu Ile Arg Lys		Leu Ala Pro Thr Thr		Asp Gly Ser	
gaa gcc att gcg aaa ccc gat	1190	gac tac ctg caa ccc	1195	1200	3609
Glu Ala Ile Ala Lys Pro Asp		Asp Tyr Leu Gln Pro		Lys Ala Ala	
cct ggt cct agt cac aga acc	1205	gactgcacgg atgagatgcc		caagctgaac	3660
Pro Gly Pro Ser His Arg Thr					
cgctactgca aggatcctag taacaagaat tcgagtaccc gagacgatga gagggattcg					3720
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<212> PRT

<213> *Drosophila melanogaster*

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Ile Thr Thr Ser Ser Ser Val Ser Asn Ala Gly Tyr Val Asp Asn Gly  
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Asn Met Lys Val Cys Ile Gly Thr Lys Ser Arg Leu Ser Val Pro Ser  
50 55 60

Asn Lys Glu His His Tyr Arg Asn Leu Arg Asp Arg Tyr Thr Asn Cys  
65 70 75 80

Thr Tyr Val Asp Gly Asn Leu Lys Leu Thr Trp Leu Pro Asn Glu Asn  
85 90 95

Leu Asp Leu Ser Phe Leu Asp Asn Ile Arg Glu Val Thr Gly Tyr Ile  
100 105 110

Leu Ile Ser His Val Asp Val Lys Lys Val Val Phe Pro Lys Leu Gln  
115 120 125

Ile Ile Arg Gly Arg Thr Leu Phe Ser Leu Ser Val Glu Glu Glu Lys  
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Tyr Ala Leu Phe Val Thr Tyr Ser Lys Met Tyr Thr Leu Glu Ile Pro

145

150

155

160

Asp Leu Arg Asp Val Leu Asn Gly Gln Val Gly Phe His Asn Asn Tyr  
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Asn Leu Cys His Met Arg Thr Ile Gln Trp Ser Glu Ile Val Ser Asn  
180 185 190

Gly Thr Asp Ala Tyr Tyr Asn Tyr Asp Phe Thr Ala Pro Glu Arg Glu  
195 200 205

Cys Pro Lys Cys His Glu Ser Cys Thr His Gly Cys Trp Gly Glu Gly  
210 215 220

Pro Lys Asn Cys Gln Lys Phe Ser Lys Leu Thr Cys Ser Pro Gln Cys  
225 230 235 240

Ala Gly Gly Arg Cys Tyr Gly Pro Lys Pro Arg Glu Cys Cys His Leu  
245 250 255

Phe Cys Ala Gly Gly Cys Thr Gly Pro Thr Gln Lys Asp Cys Ile Ala  
260 265 270

Cys Lys Asn Phe Phe Asp Glu Ala Val Ser Lys Glu Glu Cys Pro Pro  
275 280 285

Met Arg Lys Tyr Asn Pro Thr Thr Tyr Val Leu Glu Thr Asn Pro Glu  
290 295 300

Gly Lys Tyr Ala Tyr Gly Ala Thr Cys Val Lys Glu Cys Pro Gly His  
305 310 315 320

Leu Leu Arg Asp Asn Gly Ala Cys Val Arg Ser Cys Pro Gln Asp Lys  
325 330 335

Met Asp Lys Gly Gly Glu Cys Val Pro Cys Asn Gly Pro Cys Pro Lys  
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Thr Cys Pro Gly Val Thr Val Leu His Ala Gly Asn Ile Asp Ser Phe  
355 360 365

Arg Asn Cys Thr Val Ile Asp Gly Asn Ile Arg Ile Leu Asp Gln Thr  
370 375 380

Phe Ser Gly Phe Gln Asp Val Tyr Ala Asn Tyr Thr Met Gly Pro Arg  
385 390 395 400

Tyr Ile Pro Leu Asp Pro Glu Arg Arg Glu Val Phe Ser Thr Val Lys  
405 410 415

Glu Ile Thr Gly Tyr Leu Asn Ile Glu Gly Thr His Pro Gln Phe Arg  
420 425 430

Asn Leu Ser Tyr Phe Arg Asn Leu Glu Thr Ile His Gly Arg Gln Leu  
435 440 445

Met Glu Ser Met Phe Ala Ala Leu Ala Ile Val Lys Ser Ser Leu Tyr  
450 455 460

Ser Leu Glu Met Arg Asn Leu Lys Gln Ile Ser Ser Gly Ser Val Val  
465 470 475 480

Ile Gln His Asn Arg Asp Leu Cys Tyr Val Ser Asn Ile Arg Trp Pro  
485 490 495

Ala Ile Gln Lys Glu Pro Glu Gln Lys Val Trp Val Asn Glu Asn Leu  
500 505 510

Arg Ala Asp Leu Cys Glu Lys Asn Gly Thr Ile Cys Ser Asp Gln Cys  
515 520 525

Asn Glu Asp Gly Cys Trp Gly Ala Gly Thr Asp Gln Cys Leu Thr Cys  
530 535 540

Lys Asn Phe Asn Phe Asn Gly Thr Cys Ile Ala Asp Cys Gly Tyr Ile  
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Ser Asn Ala Tyr Lys Phe Asp Asn Arg Thr Cys Lys Ile Cys His Pro  
565 570 575

Glu Cys Arg Thr Cys Asn Gly Ala Gly Ala Asp His Cys Gln Glu Cys  
580 585 590

Val His Val Arg Asp Gly Gln His Cys Val Ser Glu Cys Pro Lys Asn  
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Lys Tyr Asn Asp Arg Gly Val Cys Arg Glu Cys His Ala Thr Cys Asp  
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Gly Cys Thr Gly Pro Lys Asp Thr Ile Gly Ile Gly Ala Cys Thr Thr  
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Cys Asn Leu Ala Ile Ile Asn Asn Asp Ala Thr Val Lys Arg Cys Leu  
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Leu Lys Asp Asp Lys Cys Pro Asp Gly Tyr Phe Trp Glu Tyr Val His  
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Pro Gln Glu Gln Gly Ser Leu Lys Pro Leu Ala Gly Arg Ala Val Cys  
675 680 685

Arg Lys Cys His Pro Leu Cys Glu Leu Cys Thr Asn Tyr Gly Tyr His  
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Glu Gln Val Cys Ser Lys Cys Thr His Tyr Lys Arg Arg Glu Gln Cys  
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Glu Thr Glu Cys Pro Ala Asp His Tyr Thr Asp Glu Glu Gln Arg Glu  
725 730 735

Cys Phe Gln Arg His Pro Glu Cys Asn Gly Cys Thr Gly Pro Gly Ala  
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Asp Asp Cys Lys Ser Cys Arg Asn Phe Lys Leu Phe Asp Ala Asn Glu  
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Thr Gly Pro Tyr Val Asn Ser Thr Met Phe Asn Cys Thr Ser Lys Cys  
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Pro Leu Glu Met Arg His Val Asn Tyr Gln Tyr Thr Ala Ile Gly Pro  
785 790 795 800

Tyr Cys Ala Ala Ser Pro Pro Arg Ser Ser Lys Ile Thr Ala Asn Leu  
805 810 815

Asp Val Asn Met Ile Phe Ile Ile Thr Gly Ala Val Leu Val Pro Thr  
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Ile Cys Ile Leu Cys Val Val Thr Tyr Ile Cys Arg Gln Lys Gln Lys  
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Ala Lys Lys Glu Thr Val Lys Met Thr Met Ala Leu Ser Gly Cys Glu  
850 855 860

Asp Ser Glu Pro Leu Arg Pro Ser Asn Ile Gly Ala Asn Leu Cys Lys  
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Leu Arg Ile Val Lys Asp Ala Glu Leu Arg Lys Gly Gly Val Leu Gly  
885 890 895

Met Gly Ala Phe Gly Arg Val Tyr Lys Gly Val Trp Val Pro Glu Gly  
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Glu Asn Val Lys Ile Pro Val Ala Ile Lys Glu Leu Leu Lys Ser Thr  
915 920 925

Gly Ala Glu Ser Ser Glu Glu Phe Leu Arg Glu Ala Tyr Ile Met Ala  
930 935 940

Ser Glu Glu His Val Asn Leu Leu Lys Leu Leu Ala Val Cys Met Ser  
945 950 955 960

Ser Gln Met Met Leu Ile Thr Gln Leu Met Pro Leu Gly Cys Leu Leu  
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Asn Trp Ser Thr Gln Ile Ala Lys Gly Met Ser Tyr Leu Glu Glu Lys  
995 1000 1005

Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Gln  
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Thr Pro Ser Leu Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu  
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Pro Ile Lys Trp Leu Ala Leu Glu Cys Ile Arg Asn Arg Val Phe

1055

1060

1065

Thr Ser Lys Ser Asp Val Trp Ala Phe Gly Val Thr Ile Trp Glu  
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Asp Ile Pro Asp Leu Ile Glu Val Gly Leu Lys Leu Glu Gln Pro  
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Glu Ile Cys Ser Leu Asp Ile Tyr Cys Thr Leu Leu Ser Cys Trp  
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His Leu Asp Ala Ala Met Arg Pro Thr Phe Lys Gln Leu Thr Thr  
1130 1135 1140

Val Phe Ala Glu Phe Ala Arg Asp Pro Gly Arg Tyr Leu Ala Ile  
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Pro Gly Asp Lys Phe Thr Arg Leu Pro Ala Tyr Thr Ser Gln Asp  
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Glu Lys Asp Leu Ile Arg Lys Leu Ala Pro Thr Thr Asp Gly Ser  
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cgc gat cgg gat cga gat cga ttc cta tac cgc agc agt tcg gcc caa Arg Asp Arg Asp Arg Asp Arg Phe Leu Tyr Arg Ser Ser Ser Ala Gln 50 55 60	192
aat cga cag agg ggc ggg gcc aac ttc gcc ctg gga ctg gga gcc aac Asn Arg Gln Arg Gly Gly Ala Asn Phe Ala Leu Gly Leu Gly Ala Asn 65 70 75 80	240
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Lys	Thr	Cys	Pro	Gly	Val	Thr	Val	Leu	His	Ala	Gly	Asn	Ile	Asp	Ser	
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Phe	Arg	Asn	Cys	Thr	Val	Ile	Asp	Gly	Asn	Ile	Arg	Ile	Leu	Asp	Gln	
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Thr	Phe	Ser	Gly	Phe	Gln	Asp	Val	Tyr	Ala	Asn	Tyr	Thr	Met	Gly	Pro	
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Lys	Glu	Ile	Thr	Gly	Tyr	Leu	Asn	Ile	Glu	Gly	Thr	His	Pro	Gln	Phe	
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Arg	Asn	Leu	Ser	Tyr	Phe	Arg	Asn	Leu	Glu	Thr	Ile	His	Gly	Arg	Gln	

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gtc atc cag cat aat aga gac ctc tgc tac gta agc aat atc cgt tgg Val Ile Gln His Asn Arg Asp Leu Cys Tyr Val Ser Asn Ile Arg Trp 530	535	540	1632
ccg gcc att cag aag gag ccc gaa cag aag gtg tgg gtc aac gag aat Pro Ala Ile Gln Lys Glu Pro Glu Gln Lys Val Trp Val Asn Glu Asn 545	550	555	1680
ctc agg gcg gat cta tgc gag aaa aat gga acc att tgc tcg gat cag Leu Arg Ala Asp Leu Cys Glu Lys Asn Gly Thr Ile Cys Ser Asp Gln 565	570	575	1728
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ata tcc aat gcc tac aag ttt gac aat aga acg tgc aag ata tgc cat Ile Ser Asn Ala Tyr Lys Phe Asp Asn Arg Thr Cys Lys Ile Cys His 610	615	620	1872
cca gag tgc cgg act tgc aat gga gct gga gca gat cac tgc cag gag Pro Glu Cys Arg Thr Cys Asn Gly Ala Gly Ala Asp His Cys Gln Glu 625	630	635	1920
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aac aag tac aac gat cgt ggt gtc tgc cga gag tgc cac gcc acc tgc Asn Lys Tyr Asn Asp Arg Gly Val Cys Arg Glu Cys His Ala Thr Cys 660	665	670	2016
gat gga tgc act ggg ccc aag gac acc atc ggc att gga gcg tgt acg Asp Gly Cys Thr Gly Pro Lys Asp Thr Ile Gly Ile Ala Cys Thr 675	680	685	2064
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cat ccg caa gag cag gga tcg ctg aag cca ttg gcc ggc aga gca gtt His Pro Gln Glu Gin Gly Ser Leu Lys Pro Leu Ala Gly Arg Ala Val 725 730 735	2208
tgc cga aag tgc cat ccc ctt tgc gag ctg tgc acg aac tac gga tac Cys Arg Lys Cys His Pro Leu Cys Glu Leu Cys Thr Asn Tyr Gly Tyr 740 745 750	2256
cat gaa cag gtg tgc tcc aag tgc acc cac tac aag cga cgg gag cag His Glu Gln Val Cys Ser Lys Cys Thr His Tyr Lys Arg Arg Glu Gln 755 760 765	2304
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gcc gac gat tgc aag tct tgc cgc aac ttt aag ttg ttc gac gcg aat Ala Asp Asp Cys Lys Ser Cys Arg Asn Phe Lys Leu Phe Asp Ala Asn 805 810 815	2448
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tgt ccc ttg gag atg cga cat gtg aac tat cag tac acg gcc att gga Cys Pro Leu Glu Met Arg His Val Asn Tyr Gln Tyr Thr Ala Ile Gly 835 840 845	2544
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Asn Arg Gln Arg Gly Gly Ala Asn Phe Ala Leu Gly Leu Gly Ala Asn  
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Gly Val Thr Ile Pro Thr Ser Leu Glu Asp Lys Asn Lys Asn Glu Phe  
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Val Lys Gly Lys Ile Cys Ile Gly Thr Lys Ser Arg Leu Ser Val Pro  
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Ser Asn Lys Glu His His Tyr Arg Asn Leu Arg Asp Arg Tyr Thr Asn  
115 120 125

Cys Thr Tyr Val Asp Gly Asn Leu Lys Leu Thr Trp Leu Pro Asn Glu  
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Asn Leu Asp Leu Ser Phe Leu Asp Asn Ile Arg Glu Val Thr Gly Tyr  
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Ile Leu Ile Ser His Val Asp Val Lys Lys Val Val Phe Pro Lys Leu  
165 170 175

Gln Ile Ile Arg Gly Arg Thr Leu Phe Ser Leu Ser Val Glu Glu Glu  
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Lys Tyr Ala Leu Phe Val Thr Tyr Ser Lys Met Tyr Thr Leu Glu Ile  
195 200 205

Pro Asp Leu Arg Asp Val Leu Asn Gly Gln Val Gly Phe His Asn Asn  
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Tyr Asn Leu Cys His Met Arg Thr Ile Gln Trp Ser Glu Ile Val Ser  
225 230 235 240

Asn Gly Thr Asp Ala Tyr Tyr Asn Tyr Asp Phe Thr Ala Pro Glu Arg  
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Glu Cys Pro Lys Cys His Glu Ser Cys Thr His Gly Cys Trp Gly Glu  
260 265 270

Gly Pro Lys Asn Cys Gln Lys Phe Ser Lys Leu Thr Cys Ser Pro Gln  
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Cys Ala Gly Gly Arg Cys Tyr Gly Pro Lys Pro Arg Glu Cys Cys His  
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Leu Phe Cys Ala Gly Gly Cys Thr Gly Pro Thr Gln Lys Asp Cys Ile  
305 310 315 320

Ala Cys Lys Asn Phe Phe Asp Glu Ala Val Ser Lys Glu Glu Cys Pro  
325 330 335

Pro Met Arg Lys Tyr Asn Pro Thr Thr Tyr Val Leu Glu Thr Asn Pro  
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Glu Gly Lys Tyr Ala Tyr Gly Ala Thr Cys Val Lys Glu Cys Pro Gly  
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His Leu Leu Arg Asp Asn Gly Ala Cys Val Arg Ser Cys Pro Gln Asp  
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Lys Met Asp Lys Gly Gly Glu Cys Val Pro Cys Asn Gly Pro Cys Pro  
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Phe Arg Asn Cys Thr Val Ile Asp Gly Asn Ile Arg Ile Leu Asp Gln  
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Thr Phe Ser Gly Phe Gln Asp Val Tyr Ala Asn Tyr Thr Met Gly Pro  
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Arg Tyr Ile Pro Leu Asp Pro Glu Arg Arg Glu Val Phe Ser Thr Val  
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Lys Glu Ile Thr Gly Tyr Leu Asn Ile Glu Gly Thr His Pro Gln Phe  
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Arg Asn Leu Ser Tyr Phe Arg Asn Leu Glu Thr Ile His Gly Arg Gln

485

490

495

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Tyr Ser Leu Glu Met Arg Asn Leu Lys Gln Ile Ser Ser Gly Ser Val  
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Val Ile Gln His Asn Arg Asp Leu Cys Tyr Val Ser Asn Ile Arg Trp  
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Pro Ala Ile Gln Lys Glu Pro Glu Gln Lys Val Trp Val Asn Glu Asn  
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Cys Lys Asn Phe Asn Phe Asn Gly Thr Cys Ile Ala Asp Cys Gly Tyr  
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Cys Val His Val Arg Asp Gly Gln His Cys Val Ser Glu Cys Pro Lys  
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His Pro Gln Glu Gln Gly Ser Leu Lys Pro Leu Ala Gly Arg Ala Val  
725 730 735

Cys Arg Lys Cys His Pro Leu Cys Glu Leu Cys Thr Asn Tyr Gly Tyr  
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His Glu Gln Val Cys Ser Lys Cys Thr His Tyr Lys Arg Arg Glu Gln  
755 760 765

Cys Glu Thr Glu Cys Pro Ala Asp His Tyr Thr Asp Glu Glu Gln Arg  
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Glu Thr Gly Pro Tyr Val Asn Ser Thr Met Phe Asn Cys Thr Ser Lys  
820 825 830

Cys Pro Leu Glu Met Arg His Val Asn Tyr Gln Tyr Thr Ala Ile Gly  
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Pro Tyr Cys Ala Ala Ser Pro Pro Arg Ser Ser Lys Ile Thr Ala Asn  
850 855 860

Leu Asp Val Asn Met Ile Phe Ile Ile Thr Gly Ala Val Leu Val Pro  
865 870 875 880

Thr Ile Cys Ile Leu Cys Val Val Thr Tyr Ile Cys Arg Gln Lys Gln  
885 890 895

Lys Ala Lys Lys Glu Thr Val Lys Met Thr Met Ala Leu Ser Gly Cys  
900 905 910

Glu Asp Ser Glu Pro Leu Arg Pro Ser Asn Ile Gly Ala Asn Leu Cys  
915 920 925

Lys Leu Arg Ile Val Lys Asp Ala Glu Leu Arg Lys Gly Gly Val Leu  
930 935 940

Gly Met Gly Ala Phe Gly Arg Val Tyr Lys Gly Val Trp Val Pro Glu  
945 950 955 960

Gly Glu Asn Val Lys Ile Pro Val Ala Ile Lys Glu Leu Leu Lys Ser  
965 970 975

Thr Gly Ala Glu Ser Ser Glu Glu Phe Leu Arg Glu Ala Tyr Ile Met  
980 985 990

Ala Ser Glu Glu His Val Asn Leu Leu Lys Leu Leu Ala Val Cys Met  
995 1000 1005

Ser Ser Gln Met Met Leu Ile Thr Gln Leu Met Pro Leu Gly Cys  
1010 1015 1020

Leu Leu Asp Tyr Val Arg Asn Asn Arg Asp Lys Ile Gly Ser Lys  
1025 1030 1035

Ala Leu Leu Asn Trp Ser Thr Gln Ile Ala Lys Gly Met Ser Tyr  
1040 1045 1050

Leu Glu Glu Lys Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn  
1055 1060 1065

Val Leu Val Gln Thr Pro Ser Leu Val Lys Ile Thr Asp Phe Gly  
1070 1075 1080

Leu Ala Lys Leu Leu Ser Ser Asp Ser Asn Glu Tyr Lys Ala Ala  
1085 1090 1095

Gly Gly Lys Met Pro Ile Lys Trp Leu Ala Leu Glu Cys Ile Arg  
1100 1105 1110

Asn Arg Val Phe Thr Ser Lys Ser Asp Val Trp Ala Phe Gly Val  
1115 1120 1125

Thr Ile Trp Glu Leu Leu Thr Phe Gly Gln Arg Pro His Glu Asn  
1130 1135 1140

Ile Pro Ala Lys Asp Ile Pro Asp Leu Ile Glu Val Gly Leu Lys  
1145 1150 1155

Leu Glu Gln Pro Glu Ile Cys Ser Leu Asp Ile Tyr Cys Thr Leu  
1160 1165 1170

Leu Ser Cys Trp His Leu Asp Ala Ala Met Arg Pro Thr Phe Lys  
1175 1180 1185

Gln Leu Thr Thr Val Phe Ala Glu Phe Ala Arg Asp Pro Gly Arg  
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Tyr Leu Ala Ile Pro Gly  
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1 5 10 15

ggg agc ttc tgc gcg acg ccg gaa aag aaa gtg tgt cag gga gca aac 96  
Gly Ser Phe Cys Ala Thr Pro Glu Lys Lys Val Cys Gln Gly Ala Asn  
20 25 30

aac aaa ctg act ctt ctg gga acg gtg gaa gac cat tat cag gtt ctg 144  
Asn Lys Leu Thr Leu Leu Gly Thr Val Glu Asp His Tyr Gln Val Leu  
35 40 45

ctc aga atg tac aga aac tgc act gtg gtt ctg gag aac ctg gaa att 192  
Leu Arg Met Tyr Arg Asn Cys Thr Val Val Leu Glu Asn Leu Glu Ile  
50 55 60

aca cat ata aca gag aaa tat gac ctg tcc ttc ctc aag aac atc cag 240  
Thr His Ile Thr Glu Lys Tyr Asp Leu Ser Phe Leu Lys Ser Ile Gln  
65 70 75 80

gaa gtt ggt ggc tat gtt ctt atc gcg gtc aat acg gtt tcc aaa atc Glu Val Gly Gly Tyr Val Leu Ile Ala Val Asn Thr Val Ser Lys Ile 85 90 95	288
cct ctg gag aac ctg cgc atc att cgc gga cac tca ctt tat gaa gac Pro Leu Glu Asn Leu Arg Ile Ile Arg Gly His Ser Leu Tyr Glu Asp 100 105 110	336
aaa ttt gcc ttg gcc gtc ctg gtg aac ttc aac aac agc atc gaa caa Lys Phe Ala Leu Ala Val Leu Val Asn Phe Asn Asn Ser Ile Glu Gln 115 120 125	384
ggc gta aaa gag ttg ccg ctg act agt tta act gaa ata ctt aag ggt Gly Val Lys Glu Leu Pro Leu Thr Ser Leu Thr Glu Ile Leu Lys Gly 130 135 140	432
gga gtc aag ttt tgc agg aac gat tat tta tgt aat gtg ggg acc atc Gly Val Lys Phe Cys Arg Asn Asp Tyr Leu Cys Asn Val Gly Thr Ile 145 150 155 160	480
gag tgg gcc gac atc ctg aac atg aag agc ctg cct aca atc gtg agc Glu Trp Ala Asp Ile Leu Asn Met Lys Ser Leu Pro Thr Ile Val Ser 165 170 175	528
cat aat ata agc tat gga aaa aac tgt gga aag tgc gat cca agc tgt His Asn Ile Ser Tyr Gly Lys Asn Cys Gly Lys Cys Asp Pro Ser Cys 180 185 190	576
ttc aat ggc tcc tgc tgg ggc acc gga ccc gac aag tgc cag aga atg Phe Asn Gly Ser Cys Trp Gly Thr Gly Pro Asp Lys Cys Gln Arg Met 195 200 205	624
acg aaa gtg atc tgt gcg gag cag tgt tca ggg agg tgt aaa gga ccc Thr Lys Val Ile Cys Ala Glu Gln Cys Ser Gly Arg Cys Lys Gly Pro 210 215 220	672
aga ccc att gac tgc tgt aat gaa cac tgt gct gga tgc act gga Arg Pro Ile Asp Cys Cys Asn Glu His Cys Ala Ala Gly Cys Thr Gly 225 230 235 240	720
ccc aga cct aca gac tgt ctg gcc tgt aag gac ttc cag gat gaa ggg Pro Arg Pro Thr Asp Cys Leu Ala Cys Lys Asp Phe Gln Asp Glu Gly 245 250 255	768
aca tgt aag gac gca tgt ccg cgg ctc atg ctc tac gac cca aac aca Thr Cys Lys Asp Ala Cys Pro Arg Leu Met Leu Tyr Asp Pro Asn Thr 260 265 270	816
cac cag ctc gcg cca aac cca tat ggg aag tac agc ttt ggg gca acg His Gln Leu Ala Pro Asn Pro Tyr Gly Lys Tyr Ser Phe Gly Ala Thr 275 280 285	864
tgc atc aag aca tgc cca cac aac tat gtg gtg acg gat cac ggg gcc Cys Ile Lys Thr Cys Pro His Asn Tyr Val Val Thr Asp His Gly Ala 290 295 300	912
tgt gtg aga aca tgc agc cct ggc acc tat gaa gtg gat gag ggt gga	960

Cys Val Arg Thr Cys Ser Pro Gly Thr Tyr Glu Val Asp Glu Gly Gly			
305	310	315	320
gtt cgc aaa tgt aag agg tgc gaa ggc ctg tgc cca aaa gtc tgc aat			1008
Val Arg Lys Cys Lys Arg Cys Glu Gly Leu Cys Pro Lys Val Cys Asn			
325	330	335	
ggg ttg gga atg ggg cct tta gcc aat gtc ctg tca atc aat gcc acc			1056
Gly Leu Gly Met Gly Pro Leu Ala Asn Val Leu Ser Ile Asn Ala Thr			
340	345	350	
aac atc gac tcc ttt gag aac tgc act aaa atc agc ggc aat gtt gcc			1104
Asn Ile Asp Ser Phe Glu Asn Cys Thr Lys Ile Ser Gly Asn Val Ala			
355	360	365	
atc ctc agc acc aca ttc aga ggt gac cca cat act aac act tca gga			1152
Ile Leu Ser Thr Thr Phe Arg Gly Asp Pro His Thr Asn Thr Ser Gly			
370	375	380	
ctg gat cca gca aag ctc agt gta ttg agt act gtc aaa gaa atc act			1200
Leu Asp Pro Ala Lys Leu Ser Val Leu Ser Thr Val Lys Glu Ile Thr			
385	390	395	400
ggt tac ctg atg att cag ctg tgg ccg gag agc atg cag tcc ctt agt			1248
Gly Tyr Leu Met Ile Gln Leu Trp Pro Glu Ser Met Gln Ser Leu Ser			
405	410	415	
gcc ttc gaa aac ctt gag gtc atc cga gga cgg aca aaa aca caa gga			1296
Ala Phe Glu Asn Leu Glu Val Ile Arg Gly Arg Thr Lys Thr Gln Gly			
420	425	430	
acg tac agc ttt gct gtc acc aag acg gcc atc act cat tta ggc atg			1344
Thr Tyr Ser Phe Ala Val Thr Lys Thr Ala Ile Thr His Leu Gly Met			
435	440	445	
cgt tct ctg agg gag atc agt gac ggg gac gtg tcc atc gtt aag aat			1392
Arg Ser Leu Arg Glu Ile Ser Asp Gly Asp Val Ser Ile Val Lys Asn			
450	455	460	
aag aat ctc tgc tac agc agc cct gaa cac tgg aaa cgc ctc ttc aag			1440
Lys Asn Leu Cys Tyr Ser Ser Pro Glu His Trp Lys Arg Leu Phe Lys			
465	470	475	480
tcc aaa caa cag tcg gtc aaa atg att gaa aat atg gat gct gcc acc			1488
Ser Lys Gln Gln Ser Val Lys Met Ile Glu Asn Met Asp Ala Ala Thr			
485	490	495	
tgc gcc aat cag aac agc aca tgt aat gag atg tgc acg gct gac ggc			1536
Cys Ala Asn Gln Asn Ser Thr Cys Asn Glu Met Cys Thr Ala Asp Gly			
500	505	510	
tgc tgg ggt ccc ggc ccc acc atg tgc ttc ggc tgt gag cat tac agc			1584
Cys Trp Gly Pro Gly Pro Thr Met Cys Phe Gly Cys Glu His Tyr Ser			
515	520	525	
cgc gga aaa cac tgc gtg gct tcc tgc aac ctg ctg aat ggt gag ccg			1632
Arg Gly Lys His Cys Val Ala Ser Cys Asn Leu Leu Asn Gly Glu Pro			

530	535	540	
cgt gaa tat gag gtc aat aaa aca tgc atg gaa tgc gat cct gaa tgt Arg Glu Tyr Glu Val Asn Lys Thr Cys Met Glu Cys Asp Pro Glu Cys 545	550	555	1680
ctg ctc atg aat gaa acc cag acc tgc aac ggc cct gga ccc gac aaa Leu Leu Met Asn Glu Thr Gln Thr Cys Asn Gly Pro Gly Pro Asp Lys 565	570	575	1728
tgt aca gtg tgt gca aac tat aaa gac gga ccg cac tgt gtg cat cgc Cys Thr Val Cys Ala Asn Tyr Lys Asp Gly Pro His Cys Val His Arg 580	585	590	1776
tgc ccg caa ggt gta cca gga gag aaa gac aca ctc atc tgg aaa tac Cys Pro Gln Gly Val Pro Gly Glu Lys Asp Thr Leu Ile Trp Lys Tyr 595	600	605	1824
gct gac gtg aca cac gtt tgc cag ccc tgt cat gaa aac tgc acc cag Ala Asp Val Thr His Val Cys Gln Pro Cys His Glu Asn Cys Thr Gln 610	615	620	1872
gga tgt acg ggg cct gat cta aag gac tgc aaa gat ttc aaa agc tct Gly Cys Thr Gly Pro Asp Leu Lys Asp Cys Lys Asp Phe Lys Ser Ser 625	630	635	1920
ggg ttg ccg atg atc gct gct ggc gtt gtc gga ggt cta ctg gcg ttt Gly Leu Pro Met Ile Ala Ala Gly Val Val Gly Gly Leu Leu Ala Phe 645	650	655	1968
gtt att ctg gct ctt gga gtg gcc gtt ctc ctg cgc aga cgc cac atc Val Ile Leu Ala Leu Gly Val Ala Val Leu Leu Arg Arg Arg His Ile 660	665	670	2016
cgg agg aag agg act ctg aga cga ctc ctg caa gag aga gag ctt gtg Arg Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu Val 675	680	685	2064
gag cct ctg acc ccc agc ggc gaa gcc ccc aat cag gcc tta ctg cgc Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu Arg 690	695	700	2112
atc ctc aaa gag acg gag ttc aag aag atc aaa gtg ctg ggc tcc ggg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser Gly 705	710	715	2160
gct ttc ggc act gtg cac aag ggc ctt tgg gtt cca gaa gga gag aat Ala Phe Gly Thr Val His Lys Gly Leu Trp Val Pro Glu Gly Glu Asn 725	730	735	2208
gtg aag atc cct gtc gcc atc aag gtc tta aga gaa gcc acg tct ccc Val Lys Ile Pro Val Ala Ile Lys Val Leu Arg Glu Ala Thr Ser Pro 740	745	750	2256
aaa gct aac aag gag ata atg gat gag gcg tac gtc atg gcc agt gtt Lys Ala Asn Lys Glu Ile Met Asp Glu Ala Tyr Val Met Ala Ser Val 755	760	765	2304

gag cat ccc cat gtg tgt cgt ctg ggc atc tgc ttg acc tcc aca Glu His Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr 770 775 780	2352
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gtc aga gaa aac aag gac cgc atc ggc tcc cag cac ctg ctc aac tgg Val Arg Glu Asn Lys Asp Arg Ile Gly Ser Gln His Leu Leu Asn Trp 805 810 815	2448
tgc gtg cag atc gct aaa ggt atg aat tat cta gaa gag cgc cat ctt Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Glu Arg His Leu 820 825 830	2496
gtg cac cga gac ctg gca gca cgt aat gtg ttg gta aag acg cct cag Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro Gln 835 840 845	2544
cat gtc aag att acc gat ttc ggc ctc gcc aag ctg tta aac gcg gac His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Asn Ala Asp 850 855 860	2592
gag aag gag tat cac gca gat gga gga aag gtt cca att aaa tgg atg Glu Lys Glu Tyr His Ala Asp Gly Gly Lys Val Pro Ile Lys Trp Met 865 870 875 880	2640
gcg ctg gag tcc atc cag cac agg act tac acc cac cag agt gac gtc Ala Leu Glu Ser Ile Gln His Arg Thr Tyr Thr His Gln Ser Asp Val 885 890 895	2688
tgg agc tac ggt gtg acc gtc tgg gag ttg atg acg ttt ggg acg aaa Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Thr Lys 900 905 910	2736
cct tat gat ggg att cct gcc agt gaa atc gcc gga gtt ctg gaa aaa Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ala Gly Val Leu Glu Lys 915 920 925	2784
gga gaa aga ctt cct caa ccc ccc atc tgc acc att gat gtg tac atg Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met 930 935 940	2832
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agg gag ctc atc gca gag ttc act aaa atg gct cgt gac ccg tcc cgc Arg Glu Leu Ile Ala Glu Phe Thr Lys Met Ala Arg Asp Pro Ser Arg 965 970 975	2928
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gac tcc aag ttc tac cgc agc ctg	atg agc gga gag ctg	gac gag gcc	3024
Asp Ser Lys Phe Tyr Arg Ser Leu	Met Ser Gly Glu Leu	Asp Glu Ala	
995	1000	1005	
gtg gac gca gac gag tat tta	gtg ccc aat cac agc	ttc ttc agc	3069
Val Asp Ala Asp Glu Tyr Leu	Val Pro Asn His Ser	Phe Phe Ser	
1010	1015	1020	
agc ccg agc acg tcc cgc aca	caa ctg ctg cac tct	gtg agc ctg	3114
Ser Pro Ser Thr Ser Arg Thr	Gln Leu Leu His Ser	Val Ser Leu	
1025	1030	1035	
aac agc agc ttt gga aac tgt	aat agt aga aac ggg	aat ggt tat	3159
Asn Ser Ser Phe Gly Asn Cys	Asn Ser Arg Asn Gly	Asn Gly Tyr	
1040	1045	1050	
cca gtg agg gag aac agc atg	gtc ctg cgc tac atc	cca gac ccc	3204
Pro Val Arg Glu Asn Ser Met	Val Leu Arg Tyr Ile	Pro Asp Pro	
1055	1060	1065	
aca gag cgc ttt cag gag gga	gac ttt cag cct gcg	ccg ggt tat	3249
Thr Glu Arg Phe Gln Glu Gly	Asp Phe Gln Pro Ala	Pro Gly Tyr	
1070	1075	1080	
aac gaa tat atg aac cag aat	gag tcc agc atg atc	aac cca gtg	3294
Asn Glu Tyr Met Asn Gln Asn	Glu Ser Ser Met Ile	Asn Pro Val	
1085	1090	1095	
tac cag cag ccc cac gga ccc	ccg cgg acc ctc ctc	cac tcc tcc	3339
Tyr Gln Gln Pro His Gly Pro	Pro Arg Thr Leu Leu	His Ser Ser	
1100	1105	1110	
cca gcg ctg gac gag acg gaa	gag gag tat ctg aac	tgc ttc aag	3384
Pro Ala Leu Asp Glu Thr Glu	Glu Glu Tyr Leu Asn	Cys Phe Lys	
1115	1120	1125	
agc ccg gct ccg gct tca gtg	gtg gag tat ctg aac	acg tcc cac	3429
Ser Pro Ala Pro Ala Ser Val	Val Glu Tyr Leu Asn	Thr Ser His	
1130	1135	1140	
aca cag ctg ctc tcc aca aag	ccc ttc ttc agc atg	gac aac ccc	3474
Thr Gln Leu Leu Ser Thr Lys	Pro Phe Phe Ser Met	Asp Asn Pro	
1145	1150	1155	
gac tac cag cag gac ttc tgc	ccg ctg gag ctc aaa	aca cac acc	3519
Asp Tyr Gln Gln Asp Phe Cys	Pro Leu Glu Leu Lys	Thr His Thr	
1160	1165	1170	
aac ggg cac ctg ccg gcc gcg	cag aac cag gag tac	atg ggc ctg	3564
Asn Gly His Leu Pro Ala Ala	Gln Asn Gln Glu Tyr	Met Gly Leu	
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Glu Val His			
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<212> PRT

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35 40 45

Leu Arg Met Tyr Arg Asn Cys Thr Val Val Leu Glu Asn Leu Glu Ile  
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Thr His Ile Thr Glu Lys Tyr Asp Leu Ser Phe Leu Lys Ser Ile Gln  
65 70 75 80

Glu Val Gly Gly Tyr Val Leu Ile Ala Val Asn Thr Val Ser Lys Ile  
85 90 95

Pro Leu Glu Asn Leu Arg Ile Ile Arg Gly His Ser Leu Tyr Glu Asp  
100 105 110

Lys Phe Ala Leu Ala Val Leu Val Asn Phe Asn Asn Ser Ile Glu Gln  
115 120 125

Gly Val Lys Glu Leu Pro Leu Thr Ser Leu Thr Glu Ile Leu Lys Gly  
130 135 140

Gly Val Lys Phe Cys Arg Asn Asp Tyr Leu Cys Asn Val Gly Thr Ile  
145 150 155 160

Glu Trp Ala Asp Ile Leu Asn Met Lys Ser Leu Pro Thr Ile Val Ser  
165 170 175

His Asn Ile Ser Tyr Gly Lys Asn Cys Gly Lys Cys Asp Pro Ser Cys

180

185

190

Phe Asn Gly Ser Cys Trp Gly Thr Gly Pro Asp Lys Cys Gln Arg Met  
195 200 205

Thr Lys Val Ile Cys Ala Glu Gln Cys Ser Gly Arg Cys Lys Gly Pro  
210 215 220

Arg Pro Ile Asp Cys Cys Asn Glu His Cys Ala Ala Gly Cys Thr Gly  
225 230 235 240

Pro Arg Pro Thr Asp Cys Leu Ala Cys Lys Asp Phe Gln Asp Glu Gly  
245 250 255

Thr Cys Lys Asp Ala Cys Pro Arg Leu Met Leu Tyr Asp Pro Asn Thr  
260 265 270

His Gln Leu Ala Pro Asn Pro Tyr Gly Lys Tyr Ser Phe Gly Ala Thr  
275 280 285

Cys Ile Lys Thr Cys Pro His Asn Tyr Val Val Thr Asp His Gly Ala  
290 295 300

Cys Val Arg Thr Cys Ser Pro Gly Thr Tyr Glu Val Asp Glu Gly Gly  
305 310 315 320

Val Arg Lys Cys Lys Arg Cys Glu Gly Leu Cys Pro Lys Val Cys Asn  
325 330 335

Gly Leu Gly Met Gly Pro Leu Ala Asn Val Leu Ser Ile Asn Ala Thr  
340 345 350

Asn Ile Asp Ser Phe Glu Asn Cys Thr Lys Ile Ser Gly Asn Val Ala  
355 360 365

Ile Leu Ser Thr Thr Phe Arg Gly Asp Pro His Thr Asn Thr Ser Gly  
370 375 380

Leu Asp Pro Ala Lys Leu Ser Val Leu Ser Thr Val Lys Glu Ile Thr  
385 390 395 400

Gly Tyr Leu Met Ile Gln Leu Trp Pro Glu Ser Met Gln Ser Leu Ser  
405 410 415

Ala Phe Glu Asn Leu Glu Val Ile Arg Gly Arg Thr Lys Thr Gln Gly  
420 425 430

Thr Tyr Ser Phe Ala Val Thr Lys Thr Ala Ile Thr His Leu Gly Met  
435 440 445

Arg Ser Leu Arg Glu Ile Ser Asp Gly Asp Val Ser Ile Val Lys Asn  
450 455 460

Lys Asn Leu Cys Tyr Ser Ser Pro Glu His Trp Lys Arg Leu Phe Lys  
465 470 475 480

Ser Lys Gln Gln Ser Val Lys Met Ile Glu Asn Met Asp Ala Ala Thr  
485 490 495

Cys Ala Asn Gln Asn Ser Thr Cys Asn Glu Met Cys Thr Ala Asp Gly  
500 505 510

Cys Trp Gly Pro Gly Pro Thr Met Cys Phe Gly Cys Glu His Tyr Ser  
515 520 525

Arg Gly Lys His Cys Val Ala Ser Cys Asn Leu Leu Asn Gly Glu Pro  
530 535 540

Arg Glu Tyr Glu Val Asn Lys Thr Cys Met Glu Cys Asp Pro Glu Cys  
545 550 555 560

Leu Leu Met Asn Glu Thr Gln Thr Cys Asn Gly Pro Gly Pro Asp Lys  
565 570 575

Cys Thr Val Cys Ala Asn Tyr Lys Asp Gly Pro His Cys Val His Arg  
580 585 590

Cys Pro Gln Gly Val Pro Gly Glu Lys Asp Thr Leu Ile Trp Lys Tyr  
595 600 605

Ala Asp Val Thr His Val Cys Gln Pro Cys His Glu Asn Cys Thr Gln  
610 615 620

Gly Cys Thr Gly Pro Asp Leu Lys Asp Cys Lys Asp Phe Lys Ser Ser  
625 630 635 640

Gly Leu Pro Met Ile Ala Ala Gly Val Val Gly Gly Leu Leu Ala Phe  
645 650 655

Val Ile Leu Ala Leu Gly Val Ala Val Leu Leu Arg Arg Arg His Ile  
660 665 670

Arg Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu Val  
675 680 685

Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu Arg  
690 695 700

Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser Gly  
705 710 715 720

Ala Phe Gly Thr Val His Lys Gly Leu Trp Val Pro Glu Gly Glu Asn  
725 730 735

Val Lys Ile Pro Val Ala Ile Lys Val Leu Arg Glu Ala Thr Ser Pro  
740 745 750

Lys Ala Asn Lys Glu Ile Met Asp Glu Ala Tyr Val Met Ala Ser Val  
755 760 765

Glu His Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr  
770 775 780

Val Gln Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu Leu Asp Tyr  
785 790 795 800

Val Arg Glu Asn Lys Asp Arg Ile Gly Ser Gln His Leu Leu Asn Trp  
805 810 815

Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Glu Arg His Leu  
820 825 830

Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro Gln  
835 840 845

His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Asn Ala Asp  
850 855 860

Glu Lys Glu Tyr His Ala Asp Gly Gly Lys Val Pro Ile Lys Trp Met  
865 870 875 880

Ala Leu Glu Ser Ile Gln His Arg Thr Tyr Thr His Gln Ser Asp Val  
885 890 895

Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Thr Lys  
900 905 910

Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ala Gly Val Leu Glu Lys  
915 920 925

Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met  
930 935 940

Ile Met Val Lys Cys Trp Met Ile Asp Ala Glu Ser Arg Pro Arg Phe  
945 950 955 960

Arg Glu Leu Ile Ala Glu Phe Thr Lys Met Ala Arg Asp Pro Ser Arg  
965 970 975

Tyr Leu Val Ile Gln Gly Asp Asp Arg Met His Leu Pro Ser Pro Ser  
980 985 990

Asp Ser Lys Phe Tyr Arg Ser Leu Met Ser Gly Glu Leu Asp Glu Ala  
995 1000 1005

Val Asp Ala Asp Glu Tyr Leu Val Pro Asn His Ser Phe Phe Ser  
1010 1015 1020

Ser Pro Ser Thr Ser Arg Thr Gln Leu Leu His Ser Val Ser Leu  
1025 1030 1035

Asn Ser Ser Phe Gly Asn Cys Asn Ser Arg Asn Gly Asn Gly Tyr  
1040 1045 1050

Pro Val Arg Glu Asn Ser Met Val Leu Arg Tyr Ile Pro Asp Pro  
1055 1060 1065

Thr Glu Arg Phe Gln Glu Gly Asp Phe Gln Pro Ala Pro Gly Tyr  
1070 1075 1080

Asn Glu Tyr Met Asn Gln Asn Glu Ser Ser Met Ile Asn Pro Val

1085

1090

1095

Tyr Gln Gln Pro His Gly Pro Pro Arg Thr Leu Leu His Ser Ser  
1100 1105 1110

Pro Ala Leu Asp Glu Thr Glu Glu Glu Tyr Leu Asn Cys Phe Lys  
1115 1120 1125

Ser Pro Ala Pro Ala Ser Val Val Glu Tyr Leu Asn Thr Ser His  
1130 1135 1140

Thr Gln Leu Leu Ser Thr Lys Pro Phe Phe Ser Met Asp Asn Pro  
1145 1150 1155

Asp Tyr Gln Gln Asp Phe Cys Pro Leu Glu Leu Lys Thr His Thr  
1160 1165 1170

Asn Gly His Leu Pro Ala Ala Gln Asn Gln Glu Tyr Met Gly Leu  
1175 1180 1185

Glu Val His  
1190